BULLETIN No. 15

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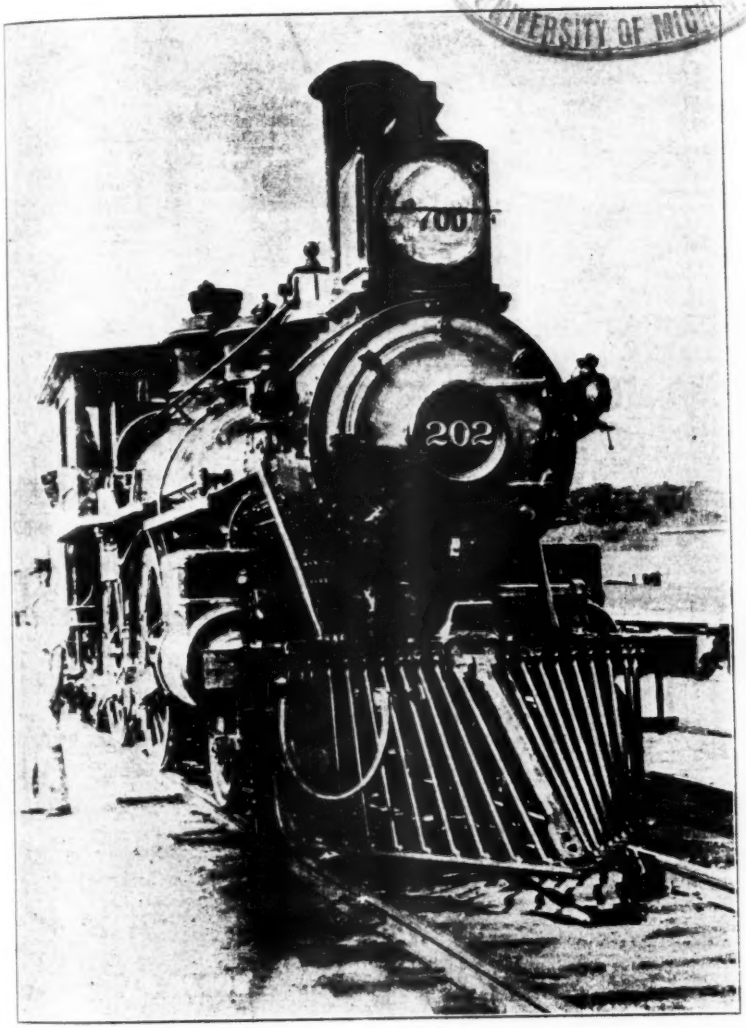

THE RAILWAY AND LOCOMOTIVE
HISTORICAL SOCIETY

BULLETIN No. 15

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The Railway and Locomotive Historical Society
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The Railway & Locomotive Historical Society.

COMMITTEE IN CHARGE OF PUBLICATIONS.

CHAS. E. FISHER, *Editor*,

J. W. MERRILL, C. L. WINEY, HERBERT FISHER

In order that the committee which has in the past issued our bulletin may be in closer touch with our members and to improve our publications it has been decided to enlarge our committee. Accordingly there will be six chairmen as follows: Messrs. C. L. Winey, J. W. Merrill, W. O. Moody, G. W. Bishop, D. L. Joslyn and Norman Thompson. These men will act as chairmen over their own committees furnishing material to the present Editor. Our members will note that in the past we have reproduced such interesting reports as the one on the South Carolina R. R., The Government Report of 1838 listing all locomotives in the United States while the report covered by Bulletin No. 13 should be fresh in the minds of most of our members. All of this material is of decided value as it is made available to all of our members. Publication of additional material of this nature will make to the value of our publications as well as early lists of motive power or interesting clippings relating to early railroading. The members of these various committees will be published in our next bulletin and our members are urged to be on the watch for interesting material that may come under their notice.

The "Fair of the Iron Horse" has been brought to a successful close. For the benefit of our members who were not fortunate enough to visit this event of the year, the pageant is listed in full elsewhere. Mr. Hungerford, Centenary Director, has promised to mail each of our members a catalogue listing all exhibits as soon as the first edition has been revised. Any doubt which may have been in the minds of the officials in charge of this "Fair" as to whether the public would be interested in an exhibition of this nature must certainly be dispelled by now. The "Fair" was prolonged another week and over one million persons visited this "Fair". The sight of those old time steam locomotives actually operating under their own steam as they passed the grand stand would last one a life time. One thing is

certain that the Baltimore & Ohio Railroad through this "Fair of the Iron Horse" has presented to the public an educational event in such a manner that they deserve only the highest praise for their efforts.

Present developments at the Baker Library indicate that about December first the room this Society will occupy will be in readiness for us. The delay has been unfortunate but in no way could it be helped by the Harvard authorities. Already there are one hundred framed photographs on the walls with books and other material coming in. Mr. Merrill is Chairman of the committee that has charge of this room and if our members have anything that they would like to give or loan the Society, they are urged to get in touch with him.

Once again our members are urged to check their bulletins and see if their file is complete. With the exception of the reprint of the first two bulletins, all back numbers can be supplied at the rate of $1.00 per copy. The price of the reprint of the first two bulletins is $1.50. Now is the time to avail yourself of getting these back numbers as well as the leaflets issued by the Society during the last five years. The latter are free. Bulletins and leaflets will be furnished by the Editor.

The "Fair of the Iron Horse".

During the weeks from September 24th to October 8th and forced to extend it another week, the Baltimore & Ohio R. R. celebrated their One Hundredth Anniversary in a suburb of Baltimore, Halethorp, Maryland. As our members will be furnished at a later date, with a catalogue listing all the exhibits at the "Fair", no attempt will be made here to do that. We will reproduce however, the pageant as it appeared, in order that our members who were unable to attend may appreciate the full worth of this exhibition.

DAILY PROGRAM OF THE PAGEANT.

1. America. Float, with the Baltimore and Ohio Glee Club, singing the Star Spangled Banner, Hail to the Baltimore and Ohio and I've Been Working on the Railroad.

IN THE DAYS BEFORE THE RAILROAD

American Indians with pack horses and travois pass in review. They are symbolic of early travel, crude and slow. These Indians are members of the Blood and Piegan tribes of the Blackfeet Nation, and come from Glacier Park, by courtesy of the Great Northern Railway.

2. Pere Marquette. The famous missionery and explorer, accompanied by Joliet and two aides, sights and blesses the Mississippi.

3. Early River Transport. Showing the crude bateau by which the first settlers traveled the great interior rivers, carrying their household goods preparatory to setting up their homes and clearing the wilderness.

The scene turns to the highway. Roads have been cut through the forests; over them come the steadily increasing army of pioneers; first on horseback and then transporting their goods, far beyond the reach of water transportation, by the first rough forms of road wagon. The post chaise shows itself, and so does the post rider.

4. Canal Days. Better by far than the rough and frequently impassable highway was the man-built water highway that developed in Eastern America. The float shows one of the early craft that plied these artificial waterways, and carried still more settlers into the West.

More and more the highway is used for transport. There come the tobacco rollers, a unique form of hauling freight one hundred years ago. There ensues the Conestoga Wagon, once a distinctive feature of the turnpike roads. A curious vehicle at this time is the so-called George Washington coach in which one sees Henry Clay riding over the National Road. It is followed by the historic coach Kearsarge; in turn by another of the same sort. The Kearsarge has been loaned by Mr. Henry Ford; the other coach by Mr. Fred Stone.

THE BIRTH OF THE RAILROAD

These modes of transport offered no full solution of the problem of the development of the nation. Faster, more dependable transportation; trans-

portation upon a far larger scale was necessary. The railroad brought it. The problem in Baltimore had been made acute by the fact that the then new Erie Canal was taking trade away from the city. Because of this a meeting of the prominent citizens was called at the home of George Brown.

5. The Birth of the Baltimore and Ohio. There is shown one of these meetings—held in February, 1827—at which the bold project of a railroad was discussed and brought into actual being. In addition to Mr. Brown, Philip E. Thomas, who was to become the first president of the new railroad, and other prominent Baltimoreans of that day are shown gathered at the table.

The broad roadway is now the principal street of Baltimore City. On it is now reproduced the historic parade of July 4, 1828, held in celebration of the laying of the First Stone of the Baltimore and Ohio Railroad. For this the trades of the town furnished many floats. From the carefully preserved documents of the day four are reproduced. The First Stone rides upon a huge car, preceded by the Band (the Mount Clare Band of today), playing the Carrollton March, written for the parade of ninety-nine years ago. The blacksmiths are represented by the Sons of Vulcan; the carpenters by a Doric Temple and the shipbuilders by a vessel, the Union. Charles Carroll of Carrollton, the only surviving signer of the Declaration of Independence, rides in a barouche.

6. Surveying for the Railroad. Gradually the new railroad project takes definite form. Army engineers are shown surveying its route. In the early thirties, the Military Academy at West Point was the only school of engineering in the land. Its graduates therefore often were called upon to serve industrial enterprise. Tribute to these army builders of the Baltimore and Ohio is paid in this float, depicting Captains McNeil and Whistler and Lieutenant Thayer, making its first reconnaissance.

The Horse Car. The new railroad was first built with no certainty as to its motive power. The men of Baltimore decided that the horse—reliable and dependable, not the uncertain steam locomotive of which they had heard vague reports from England—should be the motive power for their railroad. The Horse Car shown is a replica of the one which in May, 1830, began its daily trips between Mount Clare, Baltimore, and Ellicott's Mills, fourteen miles apart.

7. The Treadmill Car. Many ingenious devices were introduced to make horse power applicable to railroad cars. One of these on the Baltimore and Ohio was the Treadmill Car by which an ancient mechanical device was applied to rail transport. The Treadmill Car ran into a cow, was ditched, and hereafter abandoned.

8. The Sail Car. More ingenious was the Sail Car, which Evan Thomas, a brother of Philip E. Thomas, devised and placed upon the road. A replica of this was sent to the Czar, who considered its introduction upon the Russian railroads.

THE COMING OF THE STEAM LOCOMOTIVE

The horse car was not the solution of the motive power problem. Peter Cooper, of New York, financially interested in the Baltimore and Ohio, designed the Tom Thumb, the first American-built locomotive to show what the Iron Horse might do for them.

9. Tom Thumb—1829-1830. A replica of the Peter Cooper engine. It weighed only two tons but it served to demonstrate to the men of Baltimore that the steam locomotive was practical. Peter Cooper is seen driving his engine.

10. York—1831. So convincing was the lesson the Tom Thumb taught, that the directors of the Baltimore and Ohio offered a prize of $4,000 for the most effective steam locomotive. The York came as the answer. It was built by Phineas Davis, at York, Pa., weighed three and one-half tons and was capable of carrying a load of fifteen tons at a rate of fifteen miles an hour.

11. Atlantic—1832. No replica this, but the actual locomotive, which continued in service until 1893. It, in turn, is much heavier than the York, weighing six and one-half tons. It hauls two Imlay coaches, exact reproductions of passenger cars built for the Baltimore and Ohio in 1831 by a famous Baltimore coach builder.

12. Thomas Jefferson—1835. This stout little engine (the original) was the first locomotive to operate in the State of Virginia, being employed on the Winchester and Potomac Railroad in 1836.

13. William Galloway—1837. This locomotive is a replica of the Lafayette, built by Richard Norris, of Philadelphia, and was the first engine with a horizontal boiler to be used on the Baltimore and Ohio. It hauls two flour cars, typical of its day.

14. Memnon No. 57—1848. Another original locomotive built by the Newcastle Manufacturing Company, at Newcastle, Del., and being for her day, very fast, was used in passenger service.

15-16. The Birth of the Telegraph. These two floats depict the first commercial use of the telegraph on May 24, 1844, when the world-famous message, "What Hath God Wrought?" was flashed along the lines of the Baltimore and Ohio from the national capitol at Washington to the railroad station at Baltimore. Professor S. F. B. Morse, the inventor, is shown, seated at the desk.

Again the scene shifts to the highway and one sees another form of communication in the United States. This is the Pony Express and the early western stage coach (contributed to the pageant by the American Railway Express Company), which once gave glamor to the famous name of Wells Fargo and Company.

17. William Mason—1856. This original locomotive was built by the William Mason Company at Taunton, Mass. Mason's beautiful engines were the forerunners of the standard American type locomotive of today.

18. Mr. Lincoln Goes to Washington. A critical journey was that of Abraham Lincoln over the Baltimore and Ohio in February, 1861, to his first inauguration. He arrived at Washington in the early morning and is shown here with his guards, Allan Pinkerton and Colonel Ward H. Lamon.

19. Thatcher Perkins No. 117—1863. Designed along the lines of the Mason locomotives but far greater in strength were the ten-wheel engines built by Thatcher Perkins at Mount Clare in Civil War days. The Perkins is painted in its original colors and hauls a passenger train typical of its day.

20. Destruction of the Baltimore and Ohio Tracks. In modern warfare severe measures ofttimes are necessary. Baltimore and Ohio lines traversed the scene of much Civil War fighting. Frequently its tracks were torn up and destroyed, first by one army and then by the other. The money loss was very great.

21. Ross Winans No. 217—1869. The camelback locomotive invented by Ross Winans was for many years the most distinctive feature of freight transport on the Baltimore and Ohio. One is shown here, hauling a typical freight train of sixty years ago.

22. J. C. Davis No. 600—1875. This locomotive when exhibited at the Philadelphia Centennial Exposition of 1876 was said to be the heaviest passenger engine in existence. It weighs forty-five tons. Engines today may weigh three hundred tons and upward.

23. A. J. Cromwell No. 545—1888. A very successful consolidation locomotive designed by A. J. Cromwell, a former Master of Machinery of the Baltimore and Ohio.

24. The Coming of the Electric Locomotive—1895. This float shows the first electric locomotive to operate on a steam railroad. It was run in the Baltimore and Ohio Belt Line tunnel, under Baltimore, and was originally operated by overhead trolley. The third-rail system is now used in the tunnel, which thereby is kept free from smoke.

25. No. 1310—1896. The inauguration of the famous Royal Blue Line between Washington and New York called for locomotives capable of tremendously high speed. No. 1310 was built for this service. Its 78-inch drivers rendered it extremely suitable for the difficult work it was called upon to do.

26. Muhlfeld No. 2400—1904. This, the first Mallet ever built in the United States, was designed for the Baltimore and Ohio by John E. Muhlfeld, then the road's General Superintendent of Motive Power, and more recently the designer of the John B. Jervis of the Delaware and Hudson Railroad, which is also shown in this pageant.

LOCOMOTIVE VISITORS FROM AFAR

The pageant now turns from the development of the Baltimore and Ohio. Various locomotives from other railroads have come to the Fair of the Iron Horse. These now take their place in the procession.

27. England, the Mother of Railways. The modern railroad was born in England. Upon this float one sees the Rocket, the famous Stephenson locomotive which made a sensational success at the Rainhill Trials, outside of Liverpool, in 1829. George Stephenson is shown standing by his locomotive.

28. King George V No. 6000—1927. From England there has come the most powerful locomotive ever built in Great Britain. Built by the Great Western Railway at its Swindon shops it is easily capable of sustaining a speed of eighty miles an hour and, upon occasion, of one hundred miles an hour. The trim lines and simplicity of the engine as well as her color scheme is typical of British railway practice today. It carries neither headlight nor bell.

29. Confederation No. 6100—1927. Another foreign visitor is the giant Confederation of the Canadian National Railways, the largest passenger locomotive in the British Empire. It weighs three hundred and twenty-four tons and is designed for long runs, even through winter blizzards.

30. No. 2333—1926. Another Canadian guest at the Fair of the Iron Horse is this Pacific passenger locomotive of the Canadian Pacific Railway. It is designed to haul from ten to twelve cars at a speed of from eighty to eighty-five miles an hour.

VISITING LOCOMOTIVES FROM UNITED STATES RAILROADS

The pageant now returns to early locomotives of the United States—those belonging to railroads other than the Baltimore and Ohio.

31. De Witt Clinton—1831. The locomotive, with its old-fashioned train, was built at the West Point Foundry in New York City and made her first run between Albany and Schenectady over the Mohawk and Hudson Railroad, now a part of the New York Central system, on August 9, 1831.

32. John Bull—1831. Among the earliest locomotives imported from England was the John Bull from the famous Stephenson Establishment at Newcastle-on-Tyne. It was placed in service on the Camden and Amboy Railroad, now a part of the Pennsylvania System, on November 12, 1831. The engine and the original coach are ordinarily kept in the Smithsonian Institution at Washington.

33. Satilla—1860. Built by the Rogers Locomotive Works for the Atlantic and Gulf Railroad, and recently restored by Mr. Henry Ford, who has loaned it to the Fair of the Iron Horse.

34. William Crooks—1861. The first locomotive to operate in Minnesota, having gone into service from St. Paul to St. Anthony, now Minneapolis, June 28, 1862, with the baggage car and coach shown in the procession.

35. No. 5205—1927. This is the Hudson type locomotive brought out by the New York Central Railroad in the late summer of 1927, for the haulage of heavy passenger trains at very high speed. The engine is 95 feet long and has gigantic pulling force.

36. No. 8800—1926. To the Baltimore and Ohio Centenary the Pennsylvania Railroad has sent one of its finest high-speed passenger locomotives. The fine design and symmetry of the locomotive is characteristic of Pennsylvania Railroad practice. It was built at the Altoona shops of the company.

37. John B. Jervis—1927. One of the most radical departures in American locomotive design is the John B. Jervis built by the Delaware and Hudson Company. The outstanding feature of this locomotive is the water-tube boiler, capable of carrying a sustained pressure of 450 pounds to the inch.

38. No. 1125—1927. This Decapod freight locomotive of the Western Maryland Railroad is employed in overcoming the steep mountain grades of the Alleghanies. The total weight of the locomotive and its tender is 417 tons, and it has a tractive power of 90,000 pounds.

MODERN LOCOMOTIVES ON THE BALTIMORE AND OHIO

The procession of the pageant closes with an exposition of modern motive power and trains on the Baltimore and Ohio.

39. No. 2024—1927. This locomotive, designed for local service, has recently been modernized in Baltimore and Ohio shops. It wears the new passenger livery of the road—olive green and black, striped with red and gold.

40. No. 5005—1924. From the Mikado type has been developed this passenger locomotive, weighing with its tender 150 tons, and having a tractive power of 44,600 pounds. It is a highly efficient, high-speed, locomotive.

41. No. 4465—1920. The Mikado itself, as designed by George H. Emerson, Chief of Motive Power of the Baltimore and Ohio, and built by the Baldwin Locomotive Works. A freight locomotive weighing 160 tons with a tractive power of 63,200 pounds.

42. No. 6137—1926. In recent years the Santa Fe type has begun to replace the Mikado in popularity upon many American railroads. The No. 6137 here shown, also designed by Mr. Emerson, weighs 367 tons and has a tractive power of 84,300 pounds.

43. Philip E. Thomas No. 5301—1926. Designed and built by the Baltimore and Ohio in its historic Mount Clare shops, the Philip E. Thomas is one of the longest and heaviest passenger locomotives in the world. It weighs 330 tons and measures 100 feet in length. Tractive power 68,200 pounds.

44. Maryland. The final float of the procession depicts Maryland seated with her great seal in hand. At her feet is her fine city of Baltimore with its trains and ships emblematic of the great commerce that constantly passes through it.

45. No. 7151 and Freight Train—1919. One of the most powerful engines in Baltimore and Ohio freight service is this simple articulated Mallet with its great tractive power of 118,800 pounds. The short train hauled by this locomotive is made up of but twelve cars, each of them, however, typical of the service for which it is designed.

46. President Washington No. 5300 and the Capitol Limited—1927. The final triumph of the procession is the beautiful locomotive President Washington, first locomotive of the President class, which made its debut upon the Baltimore and Ohio in this summer of 1927. Resplendent in their olive green coloring, the President locomotives attract universal attention. While they are designed primarily for the New York-Washington service, the President Washington here hauls the famous train—the Capitol Limited, which already has won in its daily trips between Chicago, Washington and Baltimore, a nation-wide reputation for service, comfort and dependability. The six cars shown in the Capitol Limited of the procession, represent but half the ordinary length of the train, yet typify each feature of its unusual equipment—from barber shop to observation platform.

The Capitol Limited encircles the grounds and upon its returning to the grandstands there is enacted the trainside motor-bus operation used with great success by the Baltimore and Ohio at its Jersey City passenger terminals. The motor busses which penetrate the very heart of the city of New York come alongside the train and, in a trice, passengers and their handbaggage are transferred—without the least bit of trouble or delay.

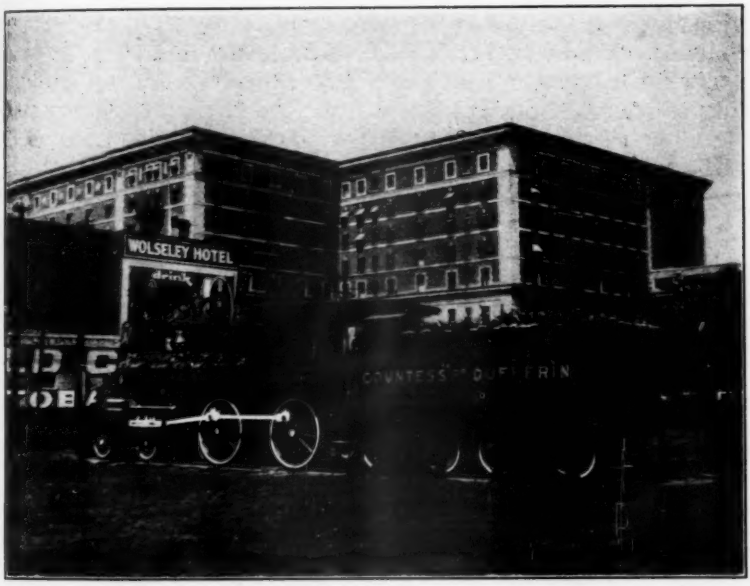
At the close of the pageant the most picturesque of the old engines and cars will line up with the modern Capitol Limited on the tracks directly in front of the grandstand.

After the singing of America the band will march off, followed by the occupants of the cars in costume, after which the public is at liberty to inspect the engines and cars.

Famous Locomotives Still on Exhibition.

By Norman Thompson.

The "Countess of Dufferin" was built by the Baldwin Locomotive Works in 1872 and purchased a few years later for use in connection with the construction of the Pembina Branch of the Canadian Pacific Railway (which was the first portion of that line to be actually opened) from St. Boniface, opposite



The "Countess of Dufferin" at Winnepeg, Man.

Winnipeg, to the International Boundary near Emerson. She came by rail from St. Paul to Fargo, N. D., whence the Red River offered a convenient method of completing the journey. She arrived in Winnipeg, Oct. 9, 1877, and after working on the line for some time, became the property of a lumber company at Golden, B. C., in 1897, remaining there engaged in switching service for several years. Finally this historic machine reverted to the C. P. R. and was presented to the City of Winnipeg and

placed in a little park opposite the station. In the summertime the veteran presents a gay appearance, decked out with flower boxes. A board placed in front of the smoke box exhibits this legend:

"This was the first railway locomotive to operate in Western Canada. Brought to Winnipeg from the United States by barge on the Red River in 1877 and ran between St. Boniface and Emerson".

The Duluth and Iron Range Rail Road was incorporated on December 21st, 1874, being built for, and by, the Minnesota Iron Company. Surveys commenced in 1882 and the first portion of the line was completed between Two Harbors and the Soudan Mine, a distance of 68 miles, about two years later.

The history of the Company is entirely bound up with the development of the iron ore mining, the initial Minnesota shipment being made from what is now Tower Junction in July 1884. The loading of the first ore at the mine was made a matter of celebration, and Indians came in from the forests and helped along the proceedings with a big pow-wow. Five cars were shipped containing one hundred tons, being of wooden construction.

Subsequent extensions were opened to Duluth in 1886, to Ely in 1888, the Western Mesaba Branch in 1893, the Eastern Mesaba Branch in 1910 and the Wales branch in 1917. The present mileage is 274 including seven miles of running rights; and there are seventy-one miles of double track; an interesting feature is that trains run on the left hand track instead of adopting the opposite practice as is general in America.

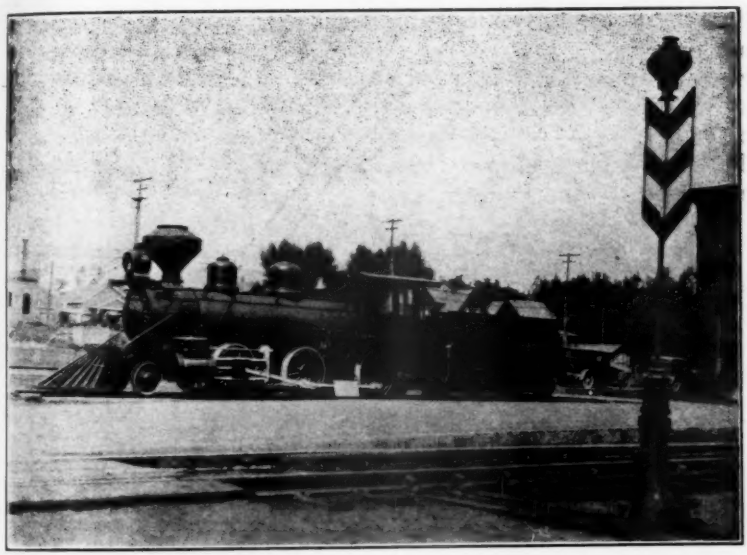
The first locomotive arrived on a scow at Two Harbors in July 1883, and was used in construction work. This is "3-Spot" now preserved at Two Harbors Station, being mounted on rails laid on a solid bed of concrete in a grass plot alongside the platform.

She is a 'Mogul' with balloon stack, built by Baldwins'. There is a curious form of boiler feed pump on the right-hand side mounted on a plate fastened to the piston rod guides; this pump has a spherical air chamber. The whistle is placed on top of the steam dome. The wheels have the rims painted grey, with green hubs and balance weights and spokes lined with yellow. The cylinder covers are also green, and the rods, grey. Two brass poles are set on either end of the front buffer beam, and the name of the railway is spelt in full in red letters backed

with yellow on the tender sides. A memorial tablet at the rear of the tender is a gift from the Baldwin Locomotive Works and contains the names of the thirty-year veterans of the Company, including those who brought the locomotive to Minnesota.

The Company also has on view an old carriage and sleigh that were used for conveying officials and employees during construction days, and a pile of ore weighing five tons, taken from a depth of 1800 feet at the Soudan Mine.

There are now 109 locomotives in use, including twelve Mikados fitted with boosters for hauling the heavy ore trains,



Duluth & Iron Range #3 at Two Harbors, Minn.

which form the staple traffic of the line. The topography of the country traversed is not particularly favorable, necessitating a succession of ascending and descending grades and a considerable degree of curvature.

From Two Harbors the line ascends steeply in climbing a plateau that reaches a height of between eight and nine hundred feet, with some ridges as much as 1000 or 1100 feet above the level of Lake Superior. The main track is laid with 80 and 90 pound rails, and creosote or zinc-chloride treated ties are used

for replacements. The main shops at Two Harbors occupy an area of thirty acres and include a large machine shop equipped for making heavy locomotive repairs; the roundhouse contains fifty stalls.

On the main line excellent accommodation is provided for passengers, including a parlour-cafe car between Duluth and Winton, there being considerable tourist travel to the Arrowhead Country in the Season.

On the Virginia branch passenger traffic has suffered severely from motor competition, and a gas rail car now supplies the entire passenger service beyond Allen Junction, on the main line. The station building at Biwabik indicates from its generous proportions that passenger business must at one time have reached considerable proportions on the Mesaba Range. Freight traffic still continues to be heavy however, and in the peak month of 1926, (July) 559 trains arrived and departed at Two Harbors. The outgoing ore shipments are largely balanced by inward coal consigned to the various mines.

Locomotive Building at Taunton, Massachusetts.

By Chas. E. Fisher.

For nearly fifty years, two locomotive building plants, separated only by the several tracks of the different railroads, turned out their respective engines and shipped them to all parts of this country and to some foreign countries as well.

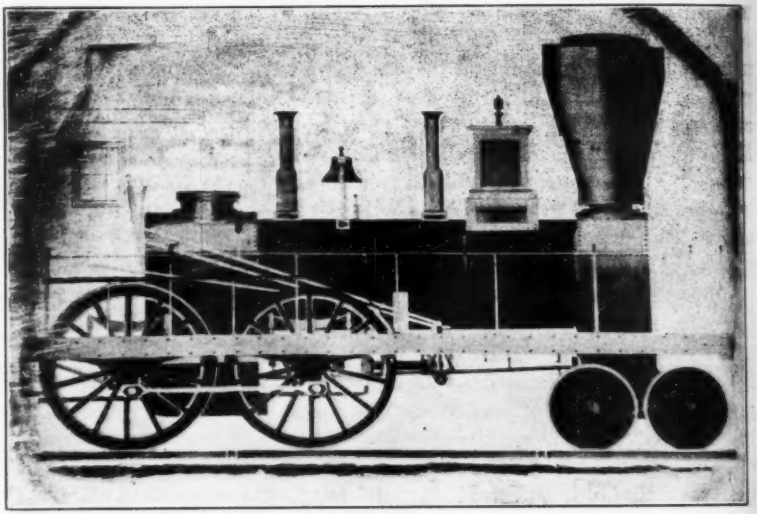
The earlier of these two companies was the Taunton Locomotive Works, founded by that energetic and far sighted gentleman, Mr. W. W. Fairbanks. This plant was the second to be built in New England that was devoted exclusively to the building of locomotives. The Taunton Locomotive Works was incorporated in January, 1847, with a capital of $50,000, later increased to $125,000. Mr. W. A. Crocker was the President and Mr. W. W. Fairbanks was the Agent and Superintendent. The finishing shop was 100x50 feet, two stories high; setting up shop was 200x55 feet, 16 feet high; with large blacksmith and boiler shops and a foundry. The buildings were built of brick and roofed with slate and were well ventilated and lighted.

The first locomotive built was the "Rough and Ready" for the Eastern Railroad, built May 29, 1847, inside connected with two pairs of drivers and four wheel truck with 14x18" cylinders, 60" drivers and weighed about 22 tons. The naming of this engine came about in this way. The carpenter in sawing off the boards preparatory to boarding up the cab, sawed them on top of the tank which had just been freshly painted, with the result the sawdust stuck to the side of the tank. Another coat of paint was hastily added to cover up the sawdust. When Mr. Fairbanks asked if the engine was ready to be shipped, the reply came "that she was rough but she was ready". The "rough and ready" appealed to him and the engine went out with that name.

This was the first of nearly one thousand engines that followed. The early engines were all inside connected. If the records are correct, the "Firefly" built May 2, 1853 for the Detroit & Pontiac R. R., was their first outside connected engine. The early locomotives went chiefly to our New England railroads, but the Hudson River, New York & Erie and the Jersey Central had many of the early Taunton engines. These engines were noted for their speed, good valve travel, plenty of boiler capaci-

ty and smooth running. They were criticised as being loose jointed. Whether this was the purpose on the part of the builders or due to ignorance I have never been able to learn but the fact remains that these Taunton engines after delivery had to be taken up in their reciprocating parts, journals and many of the bolt holes reamed and new bolts driven.

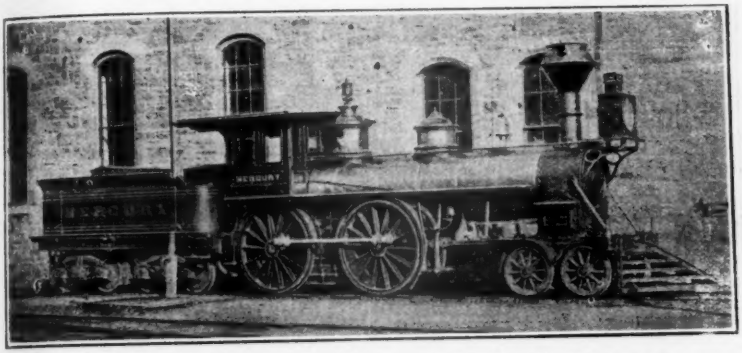
Up to 1855 the company was fairly prosperous, the works had been enlarged, 32 engines had been built in 1854 and the company was pretty well established. The management was conservative, possibly too much so as the old beaten paths were



Eastern R. R. "Rough & Ready," Taunton L. W. 1847.

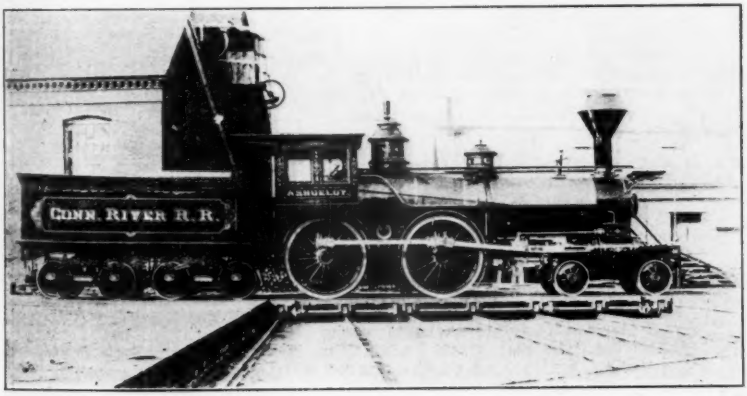
followed rather than the trying of experiments. From Apr. 23rd, 1855 to Feb. 13th, 1866, the records of this company are incomplete and the locomotives turned out during those years is partly by guess and what can be learned through the records of the various railroads. Several engines were built for the United States Military R. R. and many went on the western roads. During this time the company went through receivership and part of the time we were at war with the South when our Government commandeered locomotives and also imposed a heavy tax on new ones built and various were the ways that some of

the locomotive builders used to dodge this tax. Aside from this break in the records, they are remarkably clear and in some cases the history of their locomotives has been followed at considerable length.



Taunton & Middleborough "Mercury," Taunton L. W. 1857.

The death of Mr. Fairbanks after the Civil War caused Mr. P. I. Perrin to be made Superintendent and Mr. Harrison Tweed, Agent. For many years these men shaped the destinies



Connecticut River "Ashuelot," Taunton L. W. 1880.

of these works. The prosperity enjoyed by many of the locomotive builders immediately after the Civil War was enjoyed by this one. Locomotives were in need everywhere and the records

of these works show the Taunton engines were shipped to such roads as the Union Pacific, Milwaukee & St. Paul, St. Paul & Sioux City and many of the southern roads as well. As we all know in those days brass work played a conspicuous part of the locomotive, running gear was painted a variety of colors, boilers were covered with Russian iron and the locomotive cabs were constructed of black walnut or mahogany. It is of further interest to note that No. 508 built for the Alabama & Chattanooga R. R. No. 16 on Oct. 10, 1870 not only had all this fancy work but that the cab was upholstered as well; also a glass plate was fitted over the number of this locomotive on the cab.

A brief survey of some of the most interesting locomotives built may be of interest:

35. Rutland & Burlington R. R. "Middlebury", July 31, 1849. This engine was delivered at the north end of the road and helped construction towards the south from Burlington in August and September of that year. In November, 1864 it left the rails at Pittsford and was supposed to be ruined. The wreck was taken over as part payment for an engine built for the U. S. Military R. R., a locomotive, built too late for service, which locomotive took the name "Middlebury". The wreck was sent to Taunton, where under builder's number 384 it was rebuilt as the "Sterling" for the Fitchburg & Worcester R. R. on May 21, 1866, and ended her career by exploding on a siding in the fall of 1873.

36. Rutland & Burlington R. R. "Mt. Holly"", Sept. 6, 1849. This engine was sold to the Burlington & La Moile and renamed the "William Hale". This engine drew the train north that opened the Rutland & Burlington R. R. to general traffic, Dec. 1849. She was sold to the Burlington & La Moile in the seventies. After 1881 she burned coal and in 1898 was broken up.

72. Hudson River R. R., "Oneida", June 21, 1851. An engine noted for its accidents and lawsuits. In January, 1856, while drawing a night express train from Poughkeepsie it plunged into the Hudson River drawing the whole train after her, killing and injuring many passengers. Broken up about 1870.

#116. Vermont Central R. R., "Stranger", Oct. 15, 1852. An express engine noted for her speed, later a spare engine used for special runs. When the order was received for this engine no name was selected by the road. Some castings in the foundry with the name "Stranger" on them was found by Mr. Wm. R. Park, who had charge of its erection, and placed on the engine and thus the engine was named.

#129. Detroit & Pontiac R. R., "Firefly", Mar. 2, 1853. The first outside connected engine built by this company.

#440. Boston & Providence R. R., "Gov. Clifford", Sept. 12, 1868. Gov. Clifford was President of the Boston & Providence and as the road built most of its own engines the Governor wished his name on one built by Mr. G. S. Griggs, M. M. The name of this engine was changed to "Pegasus".

#464. Ordered by the Union Pacific, but delivered to the Rutland Division of the Vermont Central as the "St. Albans", May 31, 1869. Renamed "Shelburn", road number 37. Converted to a coal burner about 1880. Name dropped and numbered 227, later 204 and carried that number on the Norwood & St. Lawrence. Sent to the New York Locomotive Works at Rome, N. Y. and rebuilt. Delivered to the Hannawa Pulp Co. at Potsdam, N. Y. as #2 and was in service as late as 1915. In its long career on the Rutland the engine never had an accident and never failed to return to the roundhouse under its own steam.

#639. Union Pacific R. R. #133. July, 1874. First ten wheeler built for the U. P.

#879. Union Pacific R. R. #264. Jan. 25, 1883. 20x24" 50" 106500. First consolidation built for this road.

#941. Fitchburg R. R. #114. June 30, 1887. 20x24" 57" 108033. First consolidation built for this road.

The following list is some of the larger users of the Taunton engines:

Atchison, Topeka & Santa Fe R. R., 71 locomotives.
Central R. R. of New Jersey, 40 locomotives (estimated)
Connecticut River R. R., 21 locomotives.
Fitchburg R. R., 20 locomotives.
Mexican Central R. R., 23 locomotives.
Milwaukee & St. Paul R. R., 29 locomotives.
Old Colony R. R., 26 locomotives.
Union Pacific R. R., 153 locomotives.

The last locomotive, No. 980, was built in 1889 and the following may be of interest:

100th locomotive completed April 16, 1852.
200th locomotive completed in 1857.
300th locomotive completed in 1863.
400th locomotive completed Mar. 4, 1867.
500th locomotive completed June 13, 1870.
600th locomotive completed Feb. 7, 1878.
700th locomotive completed June 11, 1879.
800th locomotive completed Aug. 15, 1881.
900th locomotive completed Dec. 3, 1883.

Sixty locomotives were built in 1881, the greatest turned out in any one year, whereas in 1887 only two locomotives were built and in 1886 only four were built.

The successors of Messrs. Perrin, Tweed and Fairbanks were men who had not the vision and foresight of their predecessors and it was partly poor management and lack of facilities that caused this plant to close. After building printing presses and snow plows for electric railways the works closed completely and the buildings are now used as a storehouse of one of the yarn companies of New England.

William Mason

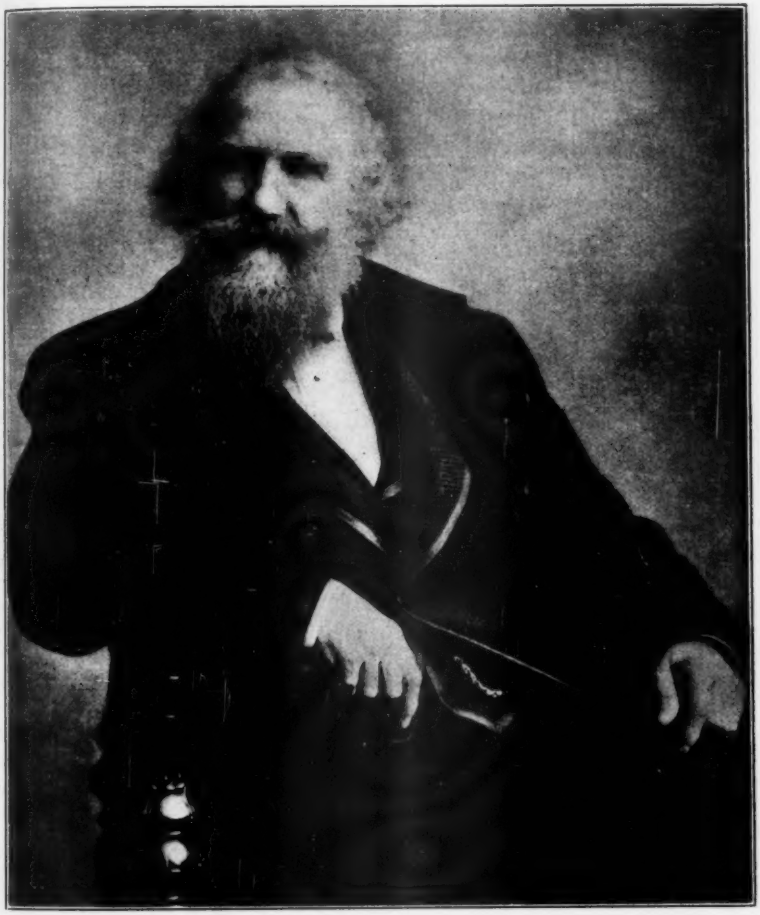
Mr. William Mason was born at Mystic, Connecticut in 1808. His father was a blacksmith in whose shops he spent much time as a boy. At the age of thirteen he left home and went to Canterbury and was an operator in the spinning room of a small cotton factory. He was a born mechanical genius. It was discovered that "Young William" could repair the most complicated machine in the mill. This fact became known at East Haddam where a mill for the manufacture of thread was about to be established and he was sent for to start the machines, though only fifteen years of age. At seventeen he entered the machine shop connected with the mill and served his three years there. It was here he set up the first power loom in this country for the manufacture of diaper linen. He also constructed an ingenious loom for the weaving of damask table cloths.

In 1832 he received an order from John Hyde, of Mystic, for some diaper looms. Having neither shop nor capital, he secured an advance on the order, contracted for the necessary frames at Williamantic, with the privilege of himself and his assistant working there. He realized a profit of about ten dollars a day. This was the turning point of his career, henceforth he devoted his time to the manufacture of machinery.

Mr. Asell Lamphaer at Killingly, Ct. was at work on a new device for spinning, since known as the ring and traveler or ring-frame. Mr. Hyde, pleased with the way Mr. Mason had fulfilled his contract, was instrumental in securing work for Mr. Mason with Mr. Lamphaer. This ring traveler was the invention of John Thorpe of Providence, R. I. and patented under date of Dec. 31, 1828. This invention had been attempted several times before but without success. Mr. Lamphaer failed and Mr. Mason took charge of the establishment on account of the creditors, receiving a percentage of the business. He remodeled and perfected the "ring". He did more. He overcame the prejudice because of its failure and in a short time this device acquired a reputation that it still retains today.

He remained at Killingly two years and then came to Taunton with Crocker & Richmond, manufactures of cotton machinery. His work was almost entirely on ring frames. The financial crisis of 1837 caused this firm to fail. The successors were

Messrs. Leach and Keith. Mr. Mason was employed as foreman. He devised a "speeder" or "roving machine" and on Oct. 8, 1840 his greatest invention, the "self-acting mule" was

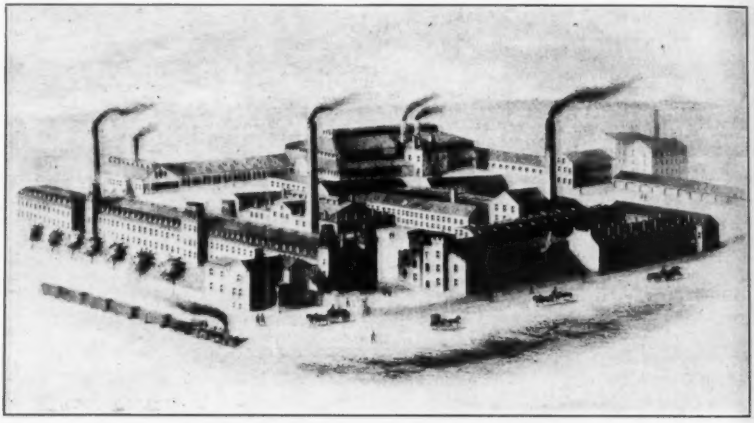


Mr. William Mason

patented. Competition called for improvements and on Oct. 3, 1846 he received a patent on "Mason's Self-acting Mule".

Messrs. Leach & Keith had failed in the winter of 1842 owing him a large amount. James K. Mills & Co. of Boston, a lead-

ing commission firm and interested in cotton machinery, came to his rescue and aided him in buying out the former partners. In 1845 new buildings were erected and the plant attained a high rank, being credited as the largest plant devoted to the manufacture of machinery in the country. From time to time it was expanded until it covered ten acres of ground. Here cotton machinery, woolen machinery, machinists' tools, blowers, cupola furnaces, gearing, shafting, car wheels made with spokes instead of being solid and later locomotives were made. During the Civil War six hundred Springfield rifles were turned out weekly.



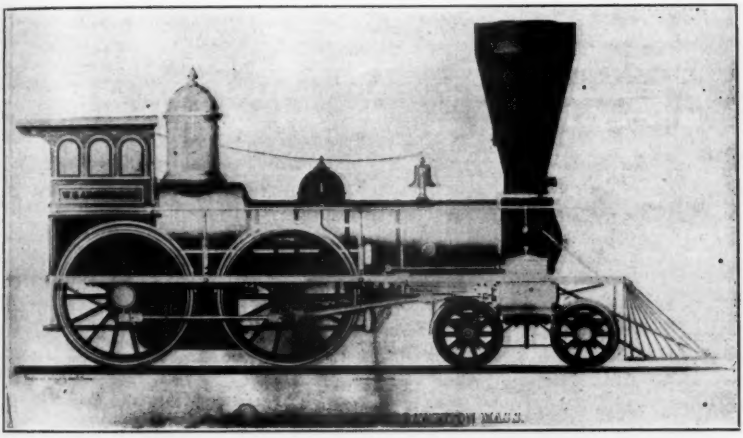
Mason Machine Works, Taunton, Mass.

In 1873 the business was organized as the Mason Machine Works with a capital of $800,000. Mr. William Mason, President; Wm. H. Bent, Treasurer; Frederick Mason, Agent; and Charles R. Olney, Clerk. Another man who should be mentioned in connection with this plant was Mr. Saul Eddy, for years Superintendent, a thorough mechanic and an able leader.

Turning to the locomotive building of this establishment, the first locomotive was completed on Oct. 11, 1853. Locomotives up to this time had been able to haul their loads with fair economy. The early engine appeared somewhat like a grasshopper and later with all the brass work, bright colors and painting they closely resembled an overdressed woman. Mr. Mason's lo-

comotives were genuinely handsome, without any ornaments. His influence was exerted over all locomotive builders at the time and remains to this day.

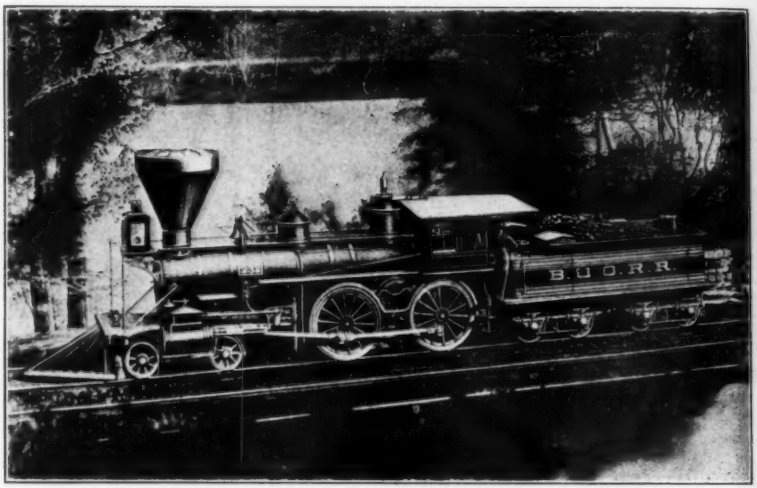
A description of the "James Guthrie", the first Mason locomotive, written by Mr. Reuben Wells, Master Mechanic of the Jeffersonville & Indiana R. R. will be of interest. He wrote: "The engine was of the eight wheel American type, cylinder 13½x22 inches, drivers 66 inches in diameter and weighed about 60,000 pounds. The cylinders were horizontal, but interchangeable, being bolted to the saddle, in whose upper face the smoke



Jeffersonville & Indiana, "W. G. Armstrong," Mason, 1853.

box rested and to which it was bolted. The cylinders were attached to this saddle at the frames. The inside face of the cylinder and the base of the saddle where they joined made the joint for the exhaust passage, the latter extending inward and upward to the base of the exhaust pipes, which were double with tips as high as the top rows of tubes. The steam chests had a goose-neck extension from their inner side into the smoke box to which the steam pipe was secured. The head and nut were 'balled' to make the joints and a cast iron ring bent on one face and balled on the other made the joint. The joints between the steam chests and cylinder covers were flat and a sheet copper gasket was used to make them steam tight. The cylinder heads

were made hollow to provide an air space and they were polished with the idea of preventing the radiation of heat. The throttle was a slide valve located in the smoke box, operated by a rod inside the dry pipe, which ran from it to the usual style of lever in the boiler heads. The boiler was wagon top but without the usual taper construction, the barrel of the boiler being flanged to the firebox sheet. The crown sheet was supported by bars, the tubes were brass, 2 inches in diameter, 11 feet long. The iron firebox was about 33x48 inches inside providing about 11 square feet of grate area. The cross heads were of cast iron lined with babbit metal working in iron guides. The valves



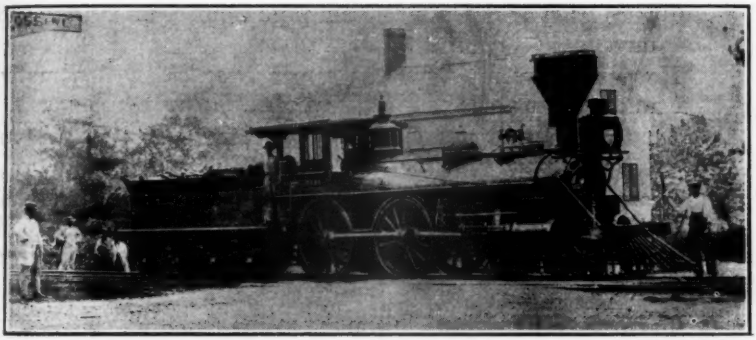
Baltimore & Ohio #232, Mason, 1857.

were worked by a shifting link motion of a pattern practically the same as used today. The lifting shaft was located above the eccentric rods, the eccentric straps were of cast iron attached to the flat ended eccentric rods by three bolts."

In 1856 Mr. Mason built two locomotives for the Cairo & Alexandria R. R. (Egypt) and the following opinion is expressed of Mr. Mason's work. He writes: "One great excellence of Mason's engines consists in the accuracy of execution, attained by an admirable set of tools and a skillful set of workmen. Every part is planed and shaped with such exactness that it fits

at once, without filing or wedging; and the boring is so perfect that the bolts fill the holes, and are driven, and allow no chance for working loose; and there is no overlapping and no open seam to be caulked and filed and scraped into decent appearance, after the work is set up. This sound method of construction insures durability; and it is the opinion of several Master Mechanics who have had charge of the locomotives built by this establishment that they are the easiest engines to keep in repair."

It may be of interest to note that these engines burned coke and that a wire gauze was used in the smoke box just below the nozzle. This was to be used when the coke was fine. The report



Hartford, Providence & Fishkill "Blackhawk," Mason, 1855.

says that these engines steamed freely and that on the trial run between Taunton and Mansfield, the time to start, run four miles and stop at the fourth mile post for the engine and tender alone was just 3½ minutes. No excessive vibration or swaying was noticed. These engines had 15x22 inch cylinders, 60 inch drivers and weighed about 30 tons. They were taken apart, boxed and shipped to Egypt on a new steam yacht that was being built in this country for the Viceroy of Egypt.

Mr. Mason is generally credited with the following improvements in locomotive construction:

Bringing the cylinders to a perfect level.
Made the driving wheels with hollow spokes and a hollow rim, pouring in lead for a counterbalance.
Spreading of the truck wheels.

Introduced the conical headed staybolt for the crown sheet.

Designed the arrangement of wedges in the jaws for locomotive driving wheel boxes.

He used the divided locomotive frame, making the front end separate from the back end, but he was not the originator of this idea.

He was the first builder in this country to equip an engine with the Walschaert valve gear. It was considered at the time a novelty and a freak, the Master Mechanics not appreciating the value at the time.

He preceded the use of the Mallet type of engine in this country by thirty years with his "Janus". His bogie engine truck and flexible steam pipe connection is in use today.

He genuinely improved the appearance of the locomotive and he was positive in the use of interchangeable parts.

He spent large sums of money in introducing his bogie type of engine but they met with but little favor.

His eight-wheel type of locomotive greatly helped establish the so-called American type and all that subsequent builders did for many years was to increase the proportions.

Turning to his list of locomotives the following notes may be of interest:

6. Boston & Worcester R. R., "Worcester", Apr. 19, 1854. Had a wood-burning stack painted bright red and made a great commotion at The Taunton Locomotive Works, when all hands came out to look at her, much to the disgust of W. W. Fairbanks, Agent.

7. Hartford, Providence & Fishkill R. R., "Providence", Apr. 22, 1854. The first inside connected engine built by Mr. Mason. He built four inside connected engines.

23. Toledo & Illinois R. R., "Ariel", July 20, 1855. The first engine with his spread truck wheels.

68. Baltimore & Ohio R. R. #231, Jan. 8, 1857. Low Moor iron crown sheets, iron tubes and chilled iron tires. Prior to this crown sheets and tubes had been made of copper or brass.

76. New York & New Haven R. R., "Promethus", Dec. 10, 1857. Boardman boiler. Eccentric outside of parallel and connecting rods.

84. Hannibal & St. Joseph R. R., "Missouri", Dec. 10, 1858. This engine in the sixties pulled the fast mail in connection with the Overland Mail making the run that was not beaten until nearly fifty years afterwards.

95. Lehigh Valley R. R. "Easton", April 2, 1860. A ten wheeler and cylinder placed on an incline at the request of that road.

#105. Providence & Worcester R. R., "Paul Whitin", Apr. 1, 1861. First engine to have the gauge cocks discharge into a dripper.

#112. U. S. Military R. R., "D. C. McCallum", May 3, 1862. First engine Mr. Mason built for the U. S. Government.

#116. Louisville & Nashville R. R. #45, Aug. 25, 1862. First engine to have hollow spokes of driving wheels filled with lead for counter balancing.

#139. Chicago, Burlington & Quincy R. R. #89, Apr. 17, 1863. New pattern center bearing on lead trucks and water leg in fire box.

#155. Grand Trunk Ry., #231, Mar. 29, 1864. Had new saddle and steam chest patterns.

#177. Portland & Kennebec R. R., "W. D. Sewall", Oct. 31, 1864. Had new bell yoke first time two arms used.

#233. Toledo, Wabash & Western R. R., "Wabash"', June 28, 1866. This engine had an electric device to prevent formation of scale in the boiler.

#242. Western R. R., "Greenbush" #84, Oct. 16, 1866. New arrangement of parallel rods, double keyed, no gibs on back end, new rocker.

#256. Boston & Worcester R. R., "Hero", Apr. 29, 1867. First engine to have the monogram between the drivers.

#306. Central R. R. of New Jersey, "Empress", Mar. 30, 1869. First engine to have rack and pinion on throttle lever.

#334. Lake Shore & Michigan Southern R. R., #114, Nov. 15, 1869. Had double sheets in boiler under yoke.

#351. Lehigh Valley R. R., "Phillipsburg", March 31, 1870. Nathan & Dreyfus oiler on rods and slides.

#353. San Francisco & San Jose R. R., "Menlo Park", Apr. 16, 1870. Cylinders oiled from cab, glass water columns.

#382. Greenville & Columbia R. R., "Gov. R. K. Scott", Dec. 10, 1870. New driving box, brakes hung on truck frames.

#385. Norfolk & Petersburg R. R. #11, Dec. 31, 1870. Brass domes, cylinders and sand box castings, brass hand rails and wheel guards. Outside trimmings to be nickle plated. Black walnut cab. Engine painted blue with gold stripes. New arrangement of frame jaws and boxes.

#438. Lehigh Valley R. R. "Janus", Built in 1871. Built after Robert F. Fairlee's designs. A double ender and a fore runner of the Mallet type engine of today.

#536. New Bedford R. R., "Wm. Mason", Sept. 5, 1874. A Fairlee type of engine and the first to be equipped with the Walschaert valve gear.

#547. Utica, Ithica & Elmira R. R., "Leviathan", Feb. 6, 1875. A bogie. The road had a rack rail and a pinion was on the front driving shaft. The engine was returned to the shop, rebuilt and sent to the Galveston, Harrisburg & San Antonio R. R. as the "Commodore Garrison" on Dec. 26, 1876.

#563. North Pacific Coast R. R., "Tomales", July 22, 1876. This engine was too heavy for the bridges on the Boston & Albany R. R. and was returned after reaching South Framingham. It was then sold as the "Mankato" to the Central R. R. of Minnesota but not delivered. It was finally sold to the Galveston, Harrisburg & San Antonio and named the "Dixie Crosby".

#632. Denver, South Park & Pacific R. R., "Denver", Oct. 8, 1880. A bogie with four pairs of driving wheels.

#714. Boston & Providence R. R., "Henry A. Whitney", June 13, 1884. This engine helped establish the running time from Boston to Providence in one hour.

A list of some of the roads the Mason engines went to may be of interest:

Atlantic, Mississippi & Ohio R. R., 21 locomotives.
Boston & Maine R. R., 23 locomotives.
Denver, South Park & Pacific R. R., 21 locomotives.
Lake Shore & Michigan Southern R. R., 34 locomotives.
Lehigh Valley R. R., 49 locomotives.
Norfolk & Petersburg R. R., 25 locomotives.
Toledo, Wabash & Western R. R., 30 locomotives.
U. S. Military R. R., 31 locomotives.

His 100th locomotive was completed in June, 1860.
200th locomotive was completed on May 9, 1865.
300th locomotive was completed on Jan. 13, 1869.
400th locomotive was completed on Apr. 24, 1871.
500th locomotive was completed on June 12, 1873.
600th locomotive was completed on April 23, 1879.
700th locomotive was completed on May 28, 1883.

In 1871 fifty-one locomotives were built, the greatest ever built in any one year, while in 1884 only three locomotives were built.

Mr. Mason died of pneumonia in the summer of 1884. His death was brought about through over exposure and over work. It seems that a locomotive that had been ordered for the Columbus & Eastern R. R. eventually went to the Old Colony R. R., the former road not being able to accept it. Mr. Mason, in making the necessary changes to Old Colony standards caught a heavy cold that developed into pneumonia, from which he died. His loss was a severe blow to not only this establishment and his city, but to the whole mechanical world as well.

Forty-one more engines were built after his death, the last one was built in 1889 and delivered in 1890. The company continued the building of cotton machinery and until lately gave employment to several hundred men in that work.

Among his other accomplishments, Mr. Mason was a painter of no mean skill and a good musician with the violin. He established a bank in Taunton for the safe guard of his employees and his gifts to charity were large and numerous.

In the locomotive building field he will always be remembered as not only a pioneer, a man who never hesitated to leave the beaten tracks, but as a builder whose locomotives ranked foremost in the country. On Feb. 20th, 1866 a Mason locomotive named the "Edward Kidder" was delivered to the Wilmington & Weldon R. R. that was not scrapped until March 18th, 1901—35 years in service. The "S. L. Fremont", another Mason en-

gine, was delivered to the same road on Feb. 27th, 1866, that was not scrapped until Sept. 19, 1905—39 years in service. Thus, these locomotives continued in service long after their builder had passed away. Mr. M. W. Forney, in the course of an obituary notice of Mr. Mason, stated: "He was a wonderfully ingenious man and combined with his ingenuity a high order of the artistic sense, so that his work was always most exquisitely designed. It might be said of his locomotives that they are 'melodies cast and wrought in metal.'"

TAUNTON LOCOMOTIVE WORKS.

1 Eastern, "Rough & Ready", May 29, 1847.
2 Eastern, "Witch", June 20, 1847.
3 Providence & Worcester, "Lonsdale", August, 1847.
4 Providence & Worcester, "Pawtucket", August, 1847. Later sold to the New Bedford & Taunton R. R.
5 Providence & Worcester, "Woonsocket", Sept. 30, 1847.
6 Connecticut River, "Ashuelot", Oct. 1847.
7 New York, Providence & Boston, "Oregon", Dec. 1847.
8 Western, "Ontario", Feb. 10, 1848.
9 Western, "Champion", Feb. 29, 1848.
10 Nashua & Lowell, "Wilton", Feb. 29, 1848.
11 Eastern, "Magnolia", Apr. 4, 1848.
12 Western, "Erie", Mar. 28, 1848.
13 Western, "St. Clair", May 25, 1848.
14 Western, "St. Lawrence", May 29, 1848.
15 Eastern, "Ironsides", May 29, 1848.
16 Western, "Providence", June 22, 1848.
17 Connecticut River, "North Star", July 5, 1848. Sold to the Watertown & Rome some time prior to 1854.
18 Providence & Worcester, "Slater", July 22, 1848.
19 Western, "Niagara", Aug. 12, 1848.
20 Western, "Concord", Aug. 12, 1848.
21 Taunton Branch, "Alfred Gibbs", Sept. 13, 1848.
22 Western, "Augusta", Sept. 27, 1848.
23 Western "Nantucket", Oct. 1848.
24 Providence & Worcester, "Grafton", Oct. 1848.
25 Norfolk County R. R., "Waterford", Nov. 22, 1848. Sold to Northern (N. Y.) and renamed "Ottawa".
26 Somerville R. R. (New Jersey), "Easton", Nov. 20, 1848.
27 Norfolk County R. R., "Walpole", Jan. 2, 1849.
28 Norfolk County R. R., "Blackstone", Feb. 6, 1849.
29 Norfolk County R. R., "Franklin", Mar. 24, 1849.
30 Boston & Providence, "Providence", Feb. 22, 1849.
31 Rutland & Burlington, "Whistler", May 28, 1849. Sold to New Bedford & Taunton R. R.
32 Rutland & Burlington, "Rutland", June 11, 1849. Changed to the "Plattsburgh" on the Montreal & Plattsburgh.
33 Rutland & Burlington, "Burlington", June 25, 1849.

34 Rutland & Burlington, "Bellows Falls", July 19, 1849.
35 Rutland & Burlington, "Middlebury", July 31, 1849.
36 Rutland & Burlington, "Mt. Holly", Sept. 6, 1849.
37 Rutland & Burlington, "Vergennes", Sept. 6, 1849.
38 Cohceco R. R., "Alton Bay", Sept. 13, 1849.
39 New London, Willimantic & Palmer, "New London", Oct. 29, 1849.
40 Hartford, Providence & Fishkill, "Vernon", Oct. 29, 1849.
41 New London, Willimantic & Palmer, "Stafford", Nov. 5, 1849.
42 New London, Willimantic & Palmer, "Willimantic", Nov. 21, 1849.
43 Hudson River R. R., "Champlain", Dec. 6, 1849.
44 Hartford, Providence & Fishkill, "Bristol", Dec. 13, 1849.
45 Rutland & Burlington, "Brandon", Jan. 7, 1850.
46 New Jersey Central, "Clinton", Jan. 26, 1850.
47 Hudson River R. R., "St. Lawrence", Feb. 28, 1850.
48 Rutland & Burlington, "Rockingham", Feb. 28, 1850. Renamed "Chester".
49 Rutland & Burlington, "Pittsford", Mar. 18, 1850.
50 Rutland & Burlington, "Charlotte", Apr. 26, 1850.
51 Hudson River R. R., "Niagra", May 18, 1850.
52 Rutland & Burlington, "Ludlow", June 11, 1850.
53 New London, Willimantic & Palmer, "Chicopee", June 25, 1850.
54 New York & Erie, "Com. Perry", July 5, 1850.
55 New York, Providence & Boston, "Westerly", July 8, 1850.
56 Watertown & Rome, "Pierrepont", Sept. 7, 1850.
57 Cleveland & Pittsburg, "Ravenna", Sept. 18, 1850.
58 New York & Erie, "California", #63, Oct. 15, 1850.
59 New York & Erie, "Jenny Lind", #62, Oct. 22, 1850.
60 Cleveland & Pittsburg, "Wellesville", Nov. 14, 1850.
61 Watertown & Rome, "Rome", Nov. 20, 1850.
62 Ogdensburg R. R., "Richlieu", Dec. 25, 1850.
63 Manchester & Lawrence, "Tilton", Jan. 13, 1851. Side covers stamped "T. L. M. Co." First to be stamped this way.
64 Passumpsic R. R., "Dartmouth", Feb. 4, 1851.
65 Watertown & Rome, "Adams", Feb. 5, 1851.
66 Rutland & Burlington, "Clarendon", Feb. 26, 1851.
67 Fall River,, "Middleborough", May 7, 1851.
68 New York & Erie #113, May 28, 1851.
69 New York & Erie #114,, May 28, 1851.
70 New York & Erie #115, May 27, 1851.
71 New York & Erie, #116, May 27, 1851.
72 Hudson River R. R., "Seneca", June 11, 1851.
73 Hudson River R. R., "Oneida", June 21, 1851.
74 New York & Erie #117, July 22, 1851.
75 New York & Erie #118, July 22, 1851.
76 Cocheco R. R., "Montpelier", Aug. 14, 1851.
77 Rutland & Burlington, "Cavendish", Aug. 16, 1851.
78 Rutland & Burlington, "General Strong", Aug. 26, 1851.
79 Hudson River R. R., "Canada", Sept. 6, 1851.
80 Watertown & Rome, "Orville Hungerford", Sept. 19, 1851.
81 Terre Haute & Richmond, "Vigo", #5, Sept. 25, 1851.
82 Terre Haute & Richmond, "Terre Haute", #6, Oct. 23, 1851.

83 Terre Haute & Richmond, "Indianapolis", #7, Oct. 23, 1851.
84 Champlain & St. Lawrence, "St. Lambert", Oct. 30, 1851.
85 New York, Providence & Boston, "Connecticut", Nov. 14, 1851.
86 Watertown & Rome, "E. Kirby", Nov. 22, 1851. Sold to the Rutland & Washington on account of a wreck.
87 Rutland & Washington, "Col. Williams", Nov. 27, 1851.
88 Hudson River R. R., "Chippewa", Dec. 15, 1851.
89 Watertown & Rome, "Col. Edmund Kirby", Dec. 26, 1851.
90 New Jersey Central, "New York", Jan. 3, 1852.
91 Rutland & Washington, "Moses Strong", Jan. 21, 1852.
92 Rutland & Washington, "John Bradley", Jan. 29, 1852.
93 New London, Willimantic & Palmer, "Amherst", Feb. 6, 1852.
94 Watertown & Rome, "N. M. Woodruff", Feb. 24, 1852.
95 Rutland & Washington, "Horace Clark", Feb. 27, 1852.
96 Watertown & Rome, "Camden", Mar. 9, 1852.
97 New Jersey Central, "Pennsylvania", Mar. 18, 1852.
98 Watertown & Rome, "Cape Vincent", Mar. 31, 1852.
99 Champlain & St. Lawrence, "St. Helen", Apr. 5, 1852.
100 Rutland & Washington, "Gov. Chittenden", Apr. 16, 1852.

MASON LOCOMOTIVES.

1 Jeffersonville & Indiana, "James Guthrie", Oct. 11, 1853. Outside connected solid spokes, copper steam pipe & flue sheet, dome over firebox.
2 Jeffersonville & Indiana, "Wm. T. Armstrong", Oct. 15, 1853.
3 Jeffersonville & Indiana, "Col. Riddle", June 17, 1854.
4 Jeffersonville & Indiana, "John Woodburn", June 17, 1854.
5 Hartford & New Haven, "Orion", Mar. 7, 1854. Hollow spokes, painted vermillion, straight stack.
6 Boston & Worcester, "Worcester", Apr. 19, 1854. V hook, weighed 26 tons.
7 Hartford, Providence & Fishkill, "Providence", Aug. 22, 1854, inside connected, V hook.
8 Hartford, Providence & Fishkill, "Hartford", Sept. 15, 1854.
9 Hartford, Providence & Fishkill, "Gov. Hoppin", Sept. 15, 1854.
10 Hartford, Providence & Fishkill, "Waterbury", Sept. 20, 1854.
11 Hartford, Providence & Fishkill, "Miantonomo", Nov. 8, 1854. Outside connected.
12 Hartford, Providence & Fishkill, "Sequasson", Nov. 21, 1854.
13 Western R. R., "Olympus", Jan. 3, 1855. Outside connected, V hook, straight boiler, perforated steam pipe, loud exhaust.
14 Western R. R., "Apollo", Jan. 19, 1855.
15 Western R. R., "Sonora", Feb. 13, 1855.
16 Western R. R., "Nevada", Jan. 21, 1855.
17 Terre Haute & Richmond, "Taunton", Apr. 17, 1855, Outside connected.
18 Terre Haute & Richmond, "Western", Apr. 17, 1855.
19 Western R. R., "Saranak", May 3, 1855.
20 Western R. R., "Panama", May 18, 1855.
21 Hartford, Providence & Fishkill, "Black Hawk", May 29, 1855.
22 Hartford, Providence & Fishkill, "Red Jacket", June 11, 1855.

23 Toledo & Illinois, "Ariel", July 20, 1855. First engine with spread truck wheels.
24 Toledo & Illinois, "Zephyr", July 20, 1855.
25 Toledo & Illinois, "Atalanta", Aug. 18, 1855.
26 Toledo & Illinois, "Camilla", Aug. 28, 1855.
27 Toledo & Illinois, "Mazeppa", Aug. 28, 1855.
28 Jeffersonville R. R., "Sultana", Sept. 28, 1855.
29 Providence & Worcester, "Slater", Oct. 23, 1855. A coal burner.
30 Hannibal & St. Joseph, "Hannibal", Nov. 1, 1855.
31 Hannibal & St. Joseph, "St. Joseph", Nov. 1, 1855.
32 Jeffersonville R. R., "Princess", Nov. 9, 1855.
33 Lake Erie, Wabash & St. Louis, "Titania", Dec. 15, 1855.
34 Lake Erie, Wabash & St. Louis, "Oberon", Dec. 20, 1855.
35 Lake Erie, Wabash & St. Louis, "Diana", Jan. 21, 1856.
36 Lake Erie, Wabash & St. Louis, "Aurora", Jan. 21, 1856.
37 Chicago & Milwaukee, "Chicago", Feb. 29, 1856.
38 Chicago & Milwaukee, "Waukeegan", Apr. 11, 1856.
39 Lake Erie, Wabash & St. Louis, "Amazon", Apr. 1, 1856.
40 Lake Erie, Wabash & St. Louis, "Nymph", May 5, 1856.
41 Cairo & Alexandria (Egypt), "Suez", May 27, 1856.
42 Cairo & Alexandria (Egypt), "Cairo", May 27, 1856.
43 Lehigh Valley, "Reliance", July 30, 1856.
44 New Jersey R. R. & Transportation Co., "Phoenix", July 29, 1856.
45 Terre Haute & Richmond, "Pacific", July 29, 1856.
46 Baltimore & Ohio R. R., #25, Aug. 15, 1856.
47 Baltimore & Ohio R. R., #26, Aug. 15, 1856.
48 LaCrosse & Milwaukee, "Erastus Corning", Sept. 4, 1856.
49 Terre Haute & Richmond, "Samson", Sept. 15, 1856.
50 T. C. Cotting, Indianapolis, Ind., "T. C. Cotting", Sept. 26, 1856.
51 Lehigh Valley, "E. A. Packer", Oct. 18, 1856.
52 Hannibal & St. Joseph, "R. M. Stewart", Oct. 30, 1856.
53 Hannibal & St. Joseph, "Gov. Polk", Oct. 30, 1856.
54 Providence & Worcester, "Mason", Nov. 4, 1856.
55 Toledo & Illinois, "Boreas", Nov. 21, 1856.
56 Toledo & Illinois, "Rushlight", Nov. 21, 1856.
57 Illinois Central, "Pluto", Jan. 6, 1857.
58 Toledo & Illinois, "Fairy", Feb. 2, 1857.
59 Toledo & Illinois, "Phantom", Feb. 2, 1857.
60 Illinois Central, "Lucifer", Feb. 22, 1857. Boardman boiler.
61 Mississippi & Missouri, "Gypsy", Mar. 14, 1857.
62 Providence & Worcester, "Isaac Davis", Apr. 6, 1857.
63 Cleveland & Pittsburg, "Comet", Apr. 22, 1857.
64 Cleveland & Pittsburg, "Meteor", Apr. 22, 1857.
65 North Pennsylvania R. R., "Allentown", May 4, 1857.
66 Cleveland & Pittsburg, "Borealis", May 11, 1857.
67 Cleveland & Pittsburg, "Nebula", May 25, 1857.
68 Baltimore & Ohio, #231, June 8, 1857. Crown sheet of Low moor iron, iron tubes, chilled iron tires.
69 Baltimore & Ohio, #232, June 8, 1857.

70 Baltimore & Ohio, #233, June 8, 1857.
71 Baltimore & Ohio, #234, June 8, 1857.
72 Boston & Lowell, "Boardman", July 28, 1857. Boardman boiler.
73 Dubuque & Western, "Prairie King", Aug. 13, 1857.
74 Baltimore & Ohio, #235, Aug. 22, 1857.
75 Baltimore & Ohio, #236, Aug. 22, 1857.
76 New York & New Haven, "Promethus", Dec. 30, 1857.
77 New Jersey R. R. & Transportation Co., "A. O. Zabriskie", Aug. 31, 1858.
78 Burlington & Missouri River, "Autocrat", Sept. 17, 1858.
79 Burlington & Missouri River, "Democrat", Oct. 8, 1858.
80 Alexandria, London & Hampshire, "Lewis McKensie", Oct. 18, 1858.
81 Burlington & Missouri River, "Grandee", Oct. 23, 1858.
82 Burlington & Missouri River, "Commoner", Nov. 14, 1858.
83 Burlington & Missouri River, "Patriot", Dec. 10, 1858.
84 Hannibal & St. Joseph, "Missouri", Dec. 10, 1858.
85 Alexandria, London & Hampshire, "Chas. P. Manning", July 13, 1859.
86 Lehigh Valley, "Bushkill", July 5, 1859. A ten wheeler.
87 Lehigh Valley, "Saucon", July 30, 1859.
88 Northern Central, #15, Aug. 22, 1859.
89 Northern Central, #16, Sept. 9, 1869.
90 Alexandria, London & Hampshire, "Clark", Oct. 20, 1859.
91 Providence & Worcester, "Mason", Nov. 15, 1859. Rebuilt #54.
92 Cape Cod R. R., "Cape Cod", Jan. 21, 1859. This was the "Burgess" built by Lawrence Mach. Co., sent here for a new boiler.
93 Dubuque & Western, "Marion", Mar. 2, 1860.
94 Providence, Hartford & Fishkill, "Baltic", Mar. 19, 1860. Rebuilt from the "Sequasson".
95 Lehigh Valley, "Easton", Apr. 29, 1860. Ten wheeler. Cylinders on an incline.
96 Boston & Worcester, "Bison", May 8, 1860.
97 Lehigh Valley, "Mauch Chunk", May 25, 1860.
98 Mobile & Ohio, "John Bloodgood", #60.
99 Mobile & Ohio, #65.
100 Mobile & Ohio, #66.
101 Mobile & Ohio, #67.
102 Mobile & Ohio, #68.
103 Mobile & Ohio, #69.

All built in the summer and fall of 1860.

The First Locomotives in the State of Maine.

By Chas. S. Given.

The first locomotive in the State of Maine made its trial trip on November 6, 1836. For the next ten years few locomotives were received or put in service. After 1850 they rapidly increased. It is the purpose of this article to enumerate the first locomotives in the order they were put in service during the first few years.

In these days of huge locomotives, heavy steel rails and bridges, block signals, air brakes and other modern appliances for rapid and safe transportation, one seldom stops to consider that transportation facilities were not always as they are today. When railroads were first introduced into Maine, railroading was in its infancy. All things pertaining to the building and equipping of a steam railroad were in an experimental stage. Very few steam railroads had been built in the United States at that early day and they were built in a very unsubstantial manner compared with those built a few years later. On all the first railroads in this country wooden rails were used on top of which were iron straps for the wheel tread. The majority of the wooden rails were laid on heavy timbers and these were laid on cross timbers or ties. This manner of building the first railroad tracks answered very well for the first few years because the locomotives were of very light weight. At the very moderate speed at which trains were run these wooden rails stood the strain very well but with the increasing weight of locomotives caused a more substantial construction and a few years later iron rails were introduced. These iron rails were short and of light weight. The ends were set in cast iron chairs, which with the aid of spikes kept the rails in place. The joints were not strapped or bolted and these joints soon became very uneven. The iron rails would hold the heavier loads but they were not much if any safer to speed over than the wooden rails because of the uneven joints. With the strapping and bolting of rails then real improvement in tracks for speed was started. Heavier and still heavier rails were rolled to meet the demand for heavier rolling stock until the modern heavy rail as we know it is now in use.

The first locomotive to turn a wheel in Maine was named the "Pioneer" and built by Stephenson & Son in England in 1835. It was delivered by a sailing vessel at Bangor in 1836 for the Bangor & Piscataquis Canal & Railroad Co., later and better known as the Bangor, Oldtown & Milford R. R. The first trial trip was made on November 6th, 1836. The "Pioneer", for that day, was considered a wonderful machine. The engine weighed 7 1/2 tons, had one pair of leading wheels and one pair of drivers together with a four wheel tank. These wheels had wooden centers and iron tires. The cylinders were 15x16", drivers 54" and pony truck 38". The boiler was eight feet long, three feet eight inches in diameter, firebox 3ft. 2 in. by 3 ft. 8 1/2 in. by 3 ft. 5 1/2 in. There were 145 flues, 1 5/8" diameter. Height of stack from rail was 15 ft. 7 in. The "Pioneer" was equipped with drop hook motion. The engine was a very poor steamer, especially in winter and for that reason the water was heated before filling the tank. The first regular run made by this engine on November 30th, 1836 and her last run was made on August 19th 1867. She had a mate but its name has been forgotten. It did not remain in service long as it was wrecked and never repaired.

The third locomotive to be run in Maine was the "Cumberland" on the Portland, Saco & Portsmouth R. R. This engine was built in 1841 and the first one built by Holmes Hinkley of Boston. It was shipped to Scarboro on a scow and put on the rails in 1841. The engine cost $3000.00. It had one pair of leading wheels and one pair of driving wheels. The cylinders were 10 1/2x20", drivers 54" and weighed without water 20670 lbs. The engine was first used July 27, 1841 and according to all available records was sold to the York & Cumberland R. R. in 1849.

The fourth locomotive to turn a wheel in the State of Maine was an English built machine purchased second hand in Canada. This was used in the construction of the Whitneyville & Machiasport R. R., then known as the Palmer & Machiasport R. R. Little is remembered about this locomotive.

The fifth locomotive was the "York" built by Hinkley in 1841 for the Portland, Saco & Portsmouth R. R. This engine was similar to the "Cumberland".

The sixth locomotive was the "Tiger" built for the Whitney-

ville & Machiasport R. R. in 1842. This was an 0-4-0, outside connected engine, drop hook motion with combination wood and iron frame. The cylinders were 9x16″, the drivers were 44″ diameter hubs and rims of iron. The boiler was 10 feet long and 38 inches in diameter. There were 72 copper tubes 7 ft. 4 in. long. The firebox was 28x32x24″. The engine weighed nine tons, cost $3000.00 and was rated at forty horse power. This locomotive was nicely proportioned and balanced and rode easily. She was considered very strong for her size and could run at a very fast clip, when the track admitted high speed. She has made a seven mile run with train in less than twenty minutes. The Whitneyville & Machiasport R. R. was of wooden construction built solidly with 3x4″ hard wood joists laid on timbers eight inches square on top of which 3/8″ iron, three inches wide was spiked with seven inch spikes. Under this structure were sleepers spaced six feet apart. Gauge of track was standard.

The seventh and eighth Maine locomotives were the "Saco" and "Casco", built for the Portland, Saco & Portsmouth R. R., by Hinkley in 1842. These locomotives were similar to the "Tiger" of the Whitneyville & Machiasport R. R.

The ninth locomotive was the "Montreal" built by Hinkley in 1845 for the Portland, Saco & Portsmouth R. R. This was an eight wheel locomotive with 13 1/2x20″ cylinders and 60″ drivers.

The tenth locomotive was the "Lion" built by Hinkley in 1846 for the Whitneyville & Machiasport R. R. It was of the same weight and design as the "Tiger", costing $2700.00, without the tender.

The Whitneyville & Machiasport R. R. was strictly a lumber road and was abandoned in 1892 when the lumber became scarce in that region. The "Tiger" and "Lion" were still in fair condition after their years of service. What became of the "Tiger", I do not know. The "Lion" fell into the hands of a Portland junk dealer and was purchased from him by Mr. Edward Rounds of Portland. It is now at the University of Maine at Orono. Two years ago it was steamed up and run a short distance hauling an old coach. This locomotive is still preserved at the University of Maine. There is also preserved with this engine the tender wheels of the first locomotive in Maine.

These were formerly the property of the late Col. Frederick Boothby and through the influence of the writer, were sent to the University of Maine.

It is a far cry from the old "Pioneer" to the modern heavy locomotives that run on the Maine rails today. The early locomotives had no cabs, bells, headlights or pilots. The water was forced into the boiler by pumps attached either to the crosshead or driver. The old wood-burners had large stacks of many different designs according to the road. For many years the "diamond" stack was standard for coal burners. Then came the tall straight stack with extension front and this has given way to the small straight stack of today.

Although they were crude and lacked the improvements of today the "boys" knew how to get over the road with them and how to get the best out of their locomotives. Considering what they had to work with they certainly did well and deserve much credit.

Some Interesting Diaries.

Mr. Henry W. Richards for a great many years was a highly respected and esteemed citizen of Dedham, Massachusetts. Like many of the past generation he kept a diary in which events were recorded. Through a relative of the family such events as related to the early railroads of Dedham and Boston have been listed and presented herewith for the benefit of our members.

From the Diary of Henry W. Richards:

1845

Feb'y. 6. A collision between the Dedham and Prov. trains of cars took place Tues. evening, smashing the engines to pieces, but injuring no one badly. Conductor and some of the passengers of the Dedham train came near perishing, in getting home * * No cars going over the road yet on account of the snow.

Feb. 21. The cars which left for Dedham at 3 o'clock yesterday afternoon did not arrive there till 10.30 today.

1846

July 4. 70th anniversary of the U. S. Independence * * 7.45 P. M. train, between Kenney's Bridge, and Toll Gate, the train was found to be minus the last car, for which we then had to return a mile or two. * * The cars started for home at about 10.30 and after stopping half an hour for the collection of fares, reached Dedham at about 12.15. About 30 cars in the train, 2 engines, carrying 1200 people.

1847

Aug. 11. Grading of Norfolk Co R. R. going on, and a bridge being built over the turnpike.

Sept. 16. The cars started from the freight house in Boston tonight on account of the old passenger house being taken down.

Oct. 16. Since Thursday, the cars have occupied the new passenger house which has been built in the past year on Pleasant St. opposite Eliot.

1848

Nov. 11. First train from Walpole to Boston ran in the morning.

1849

Jan. 9. R. R. station burned early in the morning, engine, car and walls of that portion which was of stone only were saved.

July 14. New branch R. R. from Toll Gate to Dedham on B and P road, 5 miles long, to where it joins Norfolk Co. road. Tickets reduced to 20 cents.

Oct. 31. Bad R. R. accident at "Junction Station" sending 9, A. M. train off the track. One car went down the side of the embankment, none hurt.

1850

Jan. 26. R. R. fare between Dedham and Boston raised from 20 to 25 cents.

1853

Dec. 30. Severe snow storm, trains which left Boston at 4.30 got no further than West Roxbury. Passengers remained over night, arrived home late this afternoon.

1854

Feb'y 17. 11 hours from New York. 240 miles via Blackstone, Worcester, Springfield, Hartford and New Haven.

1855

Jan. 1. Cars of the N. Y. Central & Boston commenced running today over the new route, from the depot on Sea St. foot of Summer St. Boston.

Feb. 16. R. R. track several inches below water.

1857

Jan. 19. R. R. and roads blocked by snow.

March 2. The Blackstone cars have discontinued their connection with the Dedham trains, and today recommenced running over the Boston and N. Y. Central R. R.

1858

Oct. 27. The R. R. Co today began running one train per day, between Dedham and Boston over the old Branch via Readville, in addition to the other trains.

1859

Nov. 14. Forest Hills station on the Providence road burned last night. Incendiary.

Nov. 16. Central station on the Providence road burned last night. Incendiary.

1861

Aug. 17. Highland station on the Providence road burned last night.

Aug. 22. Since Monday we have had an additional train daily between Dedham and Boston making no stops; it being the Blackstone train, which now runs through to Boston, instead of connecting with the Dedham train, making the trip in 20 minutes.

1867

Jan. 17. Severest snow storm for 10 years. The R. R.'s are entirely blocked. 8 A. M. the last train to Boston. Afternoon train for Dedham could get no further than West Roxbury. Public houses in Boston are all full, and many turned away.

Jan. 21. R. R. again blocked, no train leaving till late in the afternoon.

Jan. 22. Trains running as usual.

Feb. 11. The Prov. R. R. was probably never before flooded as it is now. Only one track can be used for inward and outward trains, and there is at least 18 in under water in Roxbury for a long distance. The trains had to proceed with great caution, and some of the later trains this afternoon failed to carry the passengers through. 7 degrees above zero.

1869

May 8. The trains stopped today for the first time at Spring St. station, just established at West Roxbury—

1871

July 22. Sunday trains commenced running over the R. R. between Boston and Dedham.

Dec. 11. The third track on the Prov. R. R. being completed from Boston to Forest Hills, were open for travel today. 7 additional trains running daily each way between Boston and Readville, the first of them starting from Dedham in the morning, and the last train returning to Dedham at night.

1873

Feb. 15. Train arrived at and departed from the old station of the Prov. R. R. in Boston for the last time. A portion of the new station ready for occupancy.

1875

Jan. 4. New passenger station in Boston of the Prov. R. R. opened this morning for use.

1877

Jan. 2. Severest snow storm for several years began at midnight and lasted through part of the day, with strong wind. The train which started for Boston very early in the A. M. with 3 engines did not return so as to start on a second trip till 12.30.

1878

Feb. 4. Severe snow storm. Snow very deep and drifted. Few trains, horse-cars in Boston nearly stopped.

1879

Aug. 11. A new bell in the R. R. depot has just replaced the one which is worn out after so many years use.

1881

March 17. Commencing today three mails are sent daily each way between Boston and Dedham.

May 9. A new train commenced running between Dedham and Boston today, making only 3 stops, and going to Boston in 25 minutes instead of 40.

1882

June 3. The N. E. R. R. now runs an express train from Dedham to Boston at 8.25.

Oct. 2. This morning the cars started from Dedham for the first time from the new depot which the Prov. R. R. Co. has been erecting during the past year.

Dec. 31. Another meeting at Memorial Hall to consider the subject of Car fares between Dedham and Boston and particularly to see if a sufficient number of season tickets would be pledged to the N. Y. and N. E. R. R. provided they offer acceptable rates and convenient trains.

1883

Jan. 6. Began riding today on a season ticket on the N. E. R. R., a majority of the season ticket passengers having concertedly left the Prov. road, the quarterly fare being reduced on the N. E. from $16 to $12.50.

Nov. 18. The principal R. R.'s in the country have agreed on a new and uniform standard of time to take effect today, and has been adopted by the public generally, The new time is nearly 16 minutes slower than the old.

1884

April 1. The N. E. R. R. now discontinues the sale of season tickets between Boston and Dedham, and substitute books of tickets of 100 trips for $10. They also take off all trains except the 6.50; 7.30; 8.15 A. M. from Dedham and 7.10; A. M. and 5; 5.30 and 6 P. M. from Boston.

June 28. The N. E. R. R. now discontinues all trains between Boston and Dedham.

1886

Feb. 16. The R. R. track is considerably under water for half a mile and the gas has been cut off.

1887

March 14. One of the worst R. R. accidents on the R. R. ever known in this vicinity, occurred this morning to the train which left Dedham at 7 A. M. * * * Bussey Bridge. All trains must go via Readville until a new bridge is built.

1887

March 21. The cars resumed their regular trips over the West Roxbury branch R. R. this morning, a temporary bridge having been completed at the place of the late disaster.

July 31. The engine of the noon train of cars from Boston jumped the track just this side of the new iron bridge, near the Dedham depot, wrecking the engine, tearing up and breaking rails so as to make the road impassible, but without injury to persons.

1888

March 13. Our trains have run regularly, but the R. R.'s are blocked in all directions, and Boston is cut off from nearly all the outside world, except in the immediate vicinity.

March 17. The snow blockade is nearly raised, and the mails begin to approach regularity.

April 12. The Old Colony R. R. has taken possession of the Boston and Providence R. R. today under a long lease just made.

April 23. The N. E. R. R. resumed running passenger trains between Dedham and Boston today, after nearly four years discontinuence.

1889

May 1. The Old Colony R. R. began selling 100 trip tickets between Dedham and Boston for $10.

1890

Aug. 2. The New England R. R. last Monday (July 28) began running a train from Boston to Dedham, at 5 o'clock P. M. making no stop.

1891

Feb'y. 11. Beginning Monday (9th) the 8 1/4 train from Dedham to Boston, runs without stopping at Hyde Park.

June 27. This week the cars have been running on the second track, just completed on the Readville branch.

1892

Feb. 15. New R. R. Dedham to Attleboro was opened for travel giving Dedham the benefit of five additional trains each way between Dedham and Boston. The first to go through without stopping at any way station. The only train to be often used the three forty five leaving Boston. Running time to Boston twenty minutes.

1895

Sept. 23. The N. Y.; N. H. and Hartford R. R. changed the running of all their trains, beginning yesterday from the left hand track, which has always been used here, to the right hand track.

Oct. 24. An entirely new time table now begins on the N. H. road, to last till the completion of the elevation of the road, to do away with all grade crossings near Boston. Only two tracks will now be used instead of three so that the number of daily trains between Boston and Dedham is reduced from 46 to 35 each way, and the express trains in which we usually return from Boston are taken off.

Dec. 2. The 8.30 A. M. train on the New England R. R. has been taken off. They run only one passenger train daily and that at 7 o'clock in the A. M.

1897

June 21. The R. R. began the use of their four tracks between Boston and Forest Hills, and have put on a new morning train from Dedham at 7.58.

1898

Jan. 2. A Sunday mail between Boston and Dedham began last Sunday (Dec. 27)

Feb'y. 1. Last night a fall of snow unequalled for at least ten years, obstructed R. R. travel, breaking down wires and poles, destroying telegraphic and electric service for a while.

1899

Sept. 11. The cars ran into the new union station, in Boston, on Summer St. for the first time, the old station on Park Sq. having been vacated last Saturday (5th) at midnight. All the other R. R.'s coming into the southern part of the city had previously occupied the new station.

The "Three Spot."

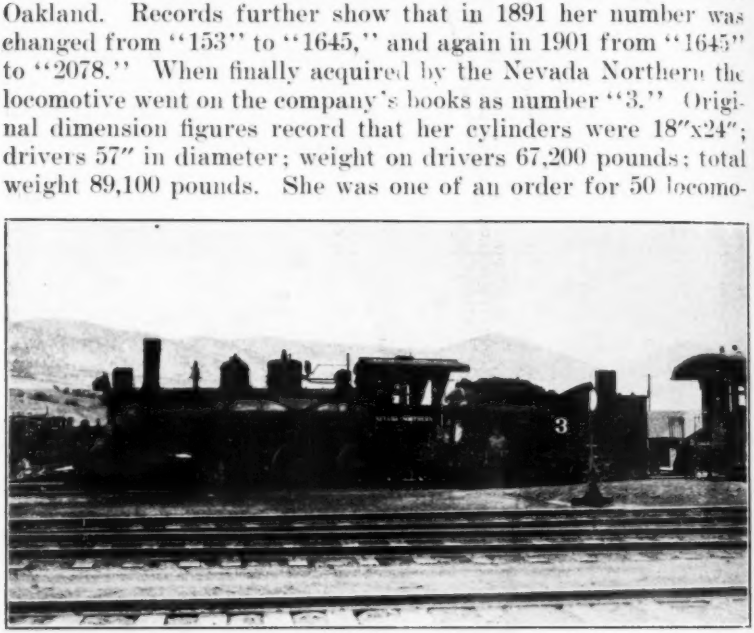
A Schenectady of 1883 Build, in Use on the Nevada Northern

By N. W. Fay.

Signals for the main line through the East Ely yards are set at clear. Other traffic of the morning is waiting safely in sidings or converging tracks. And with this temporary cessation of movement there is borne on the breeze the mellow cadence of a deep-toned whistle. The school train is coming! Simultaneously the group of young people assembled in waiting rooms and station approaches gather their books and luncheon boxes. And as they crowd forward—a restless, chattering group of present-day boys and girls—the "Three Spot," with trailing smoke, a plume of steam from her dome and bell swinging to its brazen call sweeps grandly in with her two steel coaches and comes to a grinding stop to pick up the trip's final quota of school-bound youth. Five mornings a week during the school year is this scene enacted, and during most of this period it is the "Three Spot," patriarch of the local round house and with the honors of nearly forty-four years of service to her credit that does the trick—rounding out an honorable record in the laudable work of pulling the school train. Not one of the youngsters back in the coaches was within years of being born when the "Three Spot" was a veteran a quarter of a century ago. And probably not one of them gives the faithful old locomotive a thought as her sturdy drivers carry them to 'durance vile' each morning and take them safely and swiftly home at night. An air plane circling above the mountains may attract their pasing attention, and an automobile always is a subject of interest and discussion, but the locomotive that was busy in pioneer days when their parents were young, and has figured in the amazing transitions from the far-off past to the present day is not given a thought.

The "Three Spot" came up into this part of the country with the building of the Nevada Northern railway which was formally opened to the public in 1906, and records tend to show that the locomotive was purchased by the N. N. from the S. P. in 1905. Previous records are as follows: The engine was built by the

Schenectady people in March, 1883 for the S. P. A. R., and was numbered '153.' She was used on the Southern Pacific of Arizona for several years, and then transferred to the S. P. of Calif. and ran on the Western, Sacramento and San Joaquin divisions. Her final work on the coast was on the East Bay lines in Oakland. Records further show that in 1891 her number was changed from "153" to "1645," and again in 1901 from "1645" to "2078." When finally acquired by the Nevada Northern the locomotive went on the company's books as number "3." Original dimension figures record that her cylinders were 18"x24"; drivers 57" in diameter; weight on drivers 67,200 pounds; total weight 89,100 pounds. She was one of an order for 50 locomo-



Nevada Northern R. R. "Three Spot".

tives built by the Schenectady works for the S. P. A. R., S. P. N. M., S. P. Cal. and C. P. during the years 1881, 1882 and 1883.

Since coming to Nevada the "Three Spot" has had an active existence and engaged in all classes of service on this busy road. She was used in construction work and with the completion of the 141 miles of main line north to Cobre and the extension to the mines and to McGill, went into local service. Too light for the road's heavy freight and ore drags the "Three Spot" has been assigned to shift and work trains. For several years she was out of active service and relegated to a storage track until the county made arrangements for school train service, when the "Three Spot" received general repairs and was

conditioned especially to run on the school train, making two round trips daily between Ely, where the county high school is located, and the smelter town of McGill, approximately 14 miles away.

Probably all the N. N. engineers past and present have at one time or another sat in her cab and recall her characteristics. Since her regular assignment to school work two years ago, W. J. Smith, a gentleman from Kentucky and an engineer of the old school has controlled the destinies of her daily trips. Beside the road's present equipment the "Three Spot" looms small, but she makes the time. And to those in whose hearts there yet is sentiment for the locomotive and with whom remain the recollections of days long past, it is a sensation truly delightful to watch the old "Three Spot" speeding down the valley with her white tail up and her long plume of smoke and her side rods flashing to the rythm of "forty miles an hour."

And sometimes, even today, the "Three Spot" between school trips is called to double-head the "ping pong" up the hill to the mines. Then, indeed, is the old engine something to look upon. Coupled up ahead of a big consolidated she strives with all the enthusiasm of her forty-four years and her exhaust seems to say to her heavier consort, "I'll show you how—we used to do . . . . it when I was young."

Of course, many changes have been made on this veteran engine since first turned out by her builders in '83. Stack and front end have been changed; she has had a new boiler and an electric dynamo and headlight is added to her fittings. She has had repairs from one head-on collision, and the last time through the back shop for general overhauling her cylinder diameter was reduced to better adapt her for the work she is called on to do. But in the main the "Three Spot" is all the veteran she lays claim to and her running gear with its old-time lines is the same that travelled the iron trails of the old southwest in the early days.

Probably there are yet living some of the old boys, who, should they read this sketch, will remember the "Three Spot" by another name and amidst other scenes. They may be glad to learn that her old age has fallen in pleasant lines, that she is kept spick and span, is forty-four years "young," and doing her daily bit for the good and advancement of the rising gener-

ation. Also, they may be interested to know that in a recent pageant staged in this community, portraying the winning of the west, the "Three Spot" was used in one of the scenes depicting the coming of the railroad, a scene which brought the old locomotive to the admiring and interested attention of a great concourse of people gathered from places far removed.

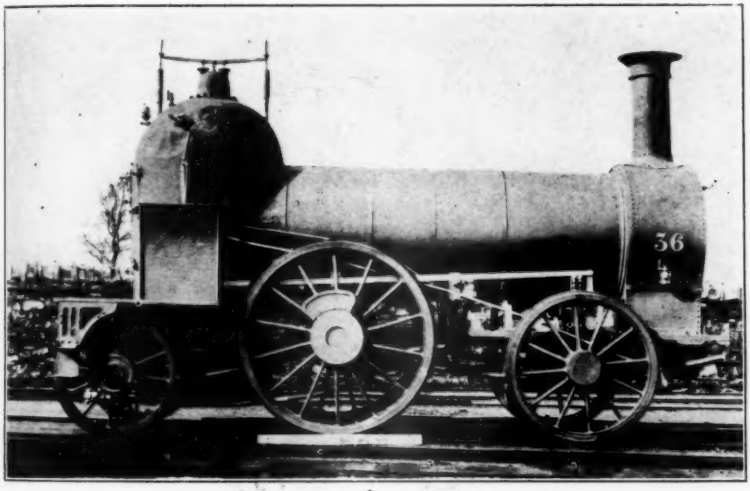
In preparing this article I wish to acknowledge receipt and tender my thanks for information and courtesies extended by G. L. Hickey, general manager of the Nevada Northern Railway; E. E. Jarrett, master mechanic; Charles E. Nesbitt, general foreman; and finally to D. L. Joslyn of Sacramento, Pacific Coast representative to the Society, whose research and records threw much light on the early history of the old "Three Spot."

As a thought in conclusion it may be timely to recall that the year 1883, natal year of this old engine, marked two important events in American transportation, namely the completion of the Northern Pacific railroad and the opening to the public of the Brooklyn bridge.

A Bury Engine on the Great Southern Railways of Ireland.

By G. W. Bishop.

This Locomotive is a good representative of the characteristic design of the early "Bury" Engines. It was purchased from the makers Messrs. Bury Curtis & Kennedy and was put to service in January 1848, by the then G. S. & W. Railway. It went out of service in January 1874. During this period of 25 years existence on the road, the engine ran 487,919 miles.



Great Southern Ry. of Ireland, Bury, 1848.

At the time when this Engine commenced its career, the railway mentioned connected Dublin with the southern port of Cork, taking the route via Thurles and Limerick Junction.

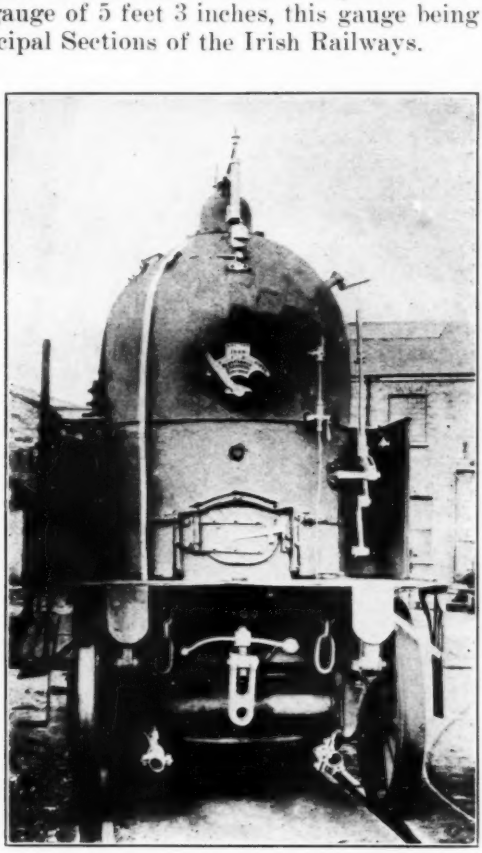
Reverting to the Locomotive in question, it is of the 2-2-2 type having cylinders 15 inches in diameter by 20 inch stroke.

The single driving wheels are 6 feet in diameter over tyres, whilst the leading and trailing wheels are 4 ft. 8 ins. and 3 ft. 10 ins. in diameter respectively. Wheel bases 7 feet 9 inches

front and 6 ft. 10 inches back, the length of the frames being 21 feet 2 inches.

The built-up bar frames are well forged and arranged to take the inside cylinders.

The wheels are placed at distance apart on the axle to suit the broad gauge of 5 feet 3 inches, this gauge being common to all the principal Sections of the Irish Railways.



Rear View of Bury Engine.

The Boiler barrel is 11 feet 11 inches in length between tube plates, containing 151 iron tubes of 2¼ inches external diameter. The "dome" is of hemispherical shape, placed over and occupying the whole area of the fire box crown providing a large steam

space. Two Spring balance lever safety valves are accommodated on the top of this dome. The "face" plate of the firebox is semi circular, finishing flush with the curve of the "domed" casing plate described.

A Copper firebox is fitted, having crown bar stays and screwed iron stays through the water spaces.

The Heating surface of the tubes is 1,000 square feet, and of the firebox 60 square feet, or an aggregate of 1060 square feet, with a grate area of 12.75 square feet. Working pressure of steam 80 lbs. per square inch. The tractive force at 85 per cent. of this pressure is 4,250 lbs.

The total weight of the engine in working order is 22 tons 19 cwts.

Height from rail to top of chimney 12 feet 8 inches.

From rail to the centre line of the boiler is 6 feet 4 ins.

The valve gear is of the Stephenson link type but differs in some respects from the usual arrangement, (see print). The expansion or slot link has central suspension from the reversing shaft lever arm. The slide valves are set horizontally on top of the cylinders and are actuated by rocker shaft and pulling rod. The latter is forked so that it may clear either side of the spindle and the spindle bearing. This bearing placed on a bracket supports the end of spindle, which is prolonged.

A peculiar feature of this drive is here introduced and may be interesting to note:

The usual bottom pulling link between the slot link block and the bottom arm of Rocker is omitted, that is, the lower arms of the rocker engage directly with the pin of the slot link block and are driven by the latter. This arrangement is secured by the rocking shaft brackets being attached to the top and near to the ends of the slide bars.

This construction, in addition to the extra support given to the valve spindles as mentioned above, also permits of long eccentric rods being used.

By courtesy of Mr. J. R. Bazin, Chief Mechanical Engineer, Great Southern Railways of Ireland.

Saint John and the Canadian Pacific Railway.

By C. Warren Anderson.

Adequate transportation throughout what is now Canada was badly needed in its early days. A trip from the east to the west was a long and tiring affair. Frequently it took months to cross the prairies and the "schooners" of the pioneer period drawn by the proverbial yokes of oxen afforded a slow and difficult method of travelling. There are men yet living who remember when a journey from Victoria to Halifax was almost as long as a trip from the Pacific Coast to England. A century ago it took a boat from ten to fourteen days, according to the weather conditions, to make a trip from Toronto to Montreal. (To-day it is a matter of a few hours). In winter a stage drawn by its spanking team of "greys" plowed through the snow-drifted roads. If our great grandfathers made fifty miles in a day, the adventure was talked over in the tavern for months.

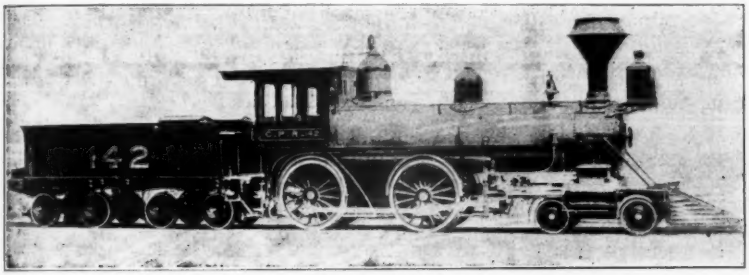
New Brunswick was a wilderness, divided by long stretches of settlement, and here and there traversed by roads. Five nights were spent in travelling from the St. John River Valley to Chaleur Bay, and most of the journey was done by canoe. At as late a date as 1840 a traveler paid twenty shillings for the 65 miles on the route from St. John to Fredericton, and it cost £12-10s. to go from St. John to Quebec. The dangers were many, not the least highway robbery. The cost of transportation made it difficult for communities to dispose of their surplus products. Information on other parts of the country was meager, and second-hand. Speedier transportation less affected by the weather conditions had become imperative.

The first move, as far as New Brunswick was concerned, was made at St. Andrews. In 1827, a public meeting was held here, and for the first time the project of building a railway, to be called the St. Andrews and Quebec Railway, to connect the Maritimes with Lower Canada, was seriously discussed.

After several years of stress and trial the project at last reached the stage of being formally approved by the New Brunswick Legislature. The company was finally incorporated, March 1836. It is interesting to note that the names of the incorporators of the line included several men who were afterwards famous. The prime movers were the Hon. Ward Chip-

man, late Chief Justice of New Brunswick; Hon. Beverly Robinson, subsequently Provincial-Treasurer; Hon. Hugh Johnston, future Attorney-General; Hon. J. R. Partelow, later Provincial Secretary; and Charles Simonds, prominent citizen. These gentlemen were all of St. John. One expects of course, to find the best brains of a community interested in any project which promotes progress, but this is an unusually formidable list.

The sum of £10,000 was given to aid the survey, and this work intrusted to a Captain Yule of the Royal Engineers. The line was to be laid with 45 pound U-rails and of narrow gauge. Some 14 miles of track had been constructed during the previous year. This work now went on.



Canadian Pacific #142.

The road's first locomotive was the "Pioneer", built by Robert Stephenson & Co., in 1850. This engine had outside cylinders, four-coupled driving wheels and steam admission governed by a slide-valve, actuated by the Stephenson's link gear.

It is unnecessary to trace in detail the further progress of the St. Andrews and Quebec Railroad, pioneer road of New Brunswick, suffice to say that, despite many difficulties, it did make gradual progress so that, at the time of Confederation, (1867), it had extended from St. Andrews to St. Stephen, and running trains regularly. This road was subsequently absorbed by the New Brunswick Railway—which in turn became an intergral part of the Canadian Pacific—thus giving the latter road its place in the early history of the province.

In 1864, the New Brunswick Legislature passed an act, offering a bonus of $10,000 a mile to certain sections of the province, to aid them in building railways. With this encouragement a

line, from St. John to the Maine Border with a branch to Fredericton, was begun in 1865, known as the "Western Extention", and the road opened as far as "City Camp" (now McAdam Junction) in 1869.

The Canadian Pacific Railway, was incorporated by an Act of Parliament of Canada, embracing the contract and charter to carry out the obligation the Canadian Government assumed, on admission of the Province of British Columbia into the union with the other provinces of the Dominion, and to connect the western coast with the railway system of Canada.

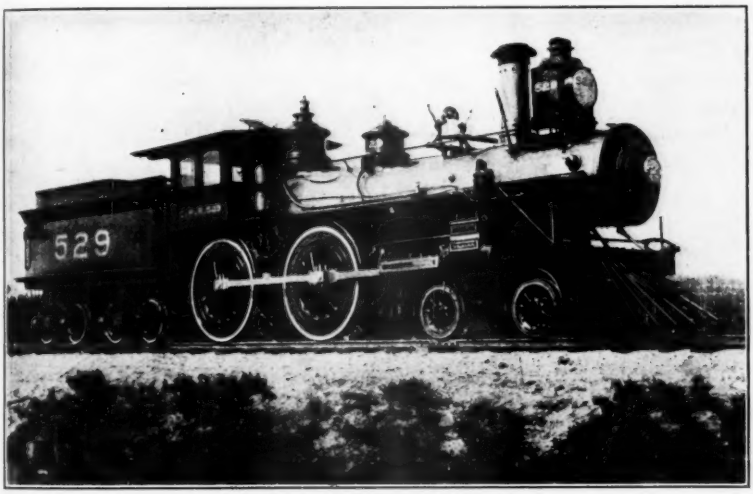
The idea of a Canadian transcontinental system of transportation was no new thing. A route to the Pacific via the inland waterways had been suggested as early as 1829. Carmichael Smyth, in 1849, had advocated the construction by convict labor of a road to the western coast, and the propheey of the Hon. Joseph Howe of Halifax, in 1850, that many then living would be able to travel from the Atlantic to the Pacific in five or six days, was as common in New Brunswick as it was in Nova Scotia.

The Canadian Pacific Railway Syndicate was formed in September 1880. The Dominion Government contracted with this syndicate, who undertook to build the line within ten years from date of contract, receiving a grant of $25,000,000 and 25,000,000 acres of land, and being permanently exempt from all forms of taxation on the railway or capital, with a twenty year exemption from taxation on its land. The syndicate also received the 713 miles of line already constructed or contracted for under other attempts previously made to construct the road.

February 17, 1881, the Canadian Pacific Railway Company was incorporated with Mr. George Stephen (later Lord Mount Stephen) as president. In June of that year the rattle and roar of the first construction train was heard. On November 7, 1885, five years ahead of the contract, the stroke of the heavy sledge in the hands of Sir Donald A. Smith (afterwards Lord Strathcona) echoed through the Rockies at Craigellache, driving the last spike, "Clinching the rivets of an Empire down". Between these two dates lies a tale which the company can look back upon with pardonable pride, as an epic in which are blended stern fortitude in the face of great difficulties, unwavering faith in the ultimate success of a project which many men ridi-

culed as a dream of those who were doomed to see their work perish in the western wilds, and exaltant endeavor on the part of men who, with their strong hands thrust the road onward over that immensity of mountain, rock, and prairie. On June 28, 1886, the line was opened for through traffic.

The recent retirement of three of the oldest locomotive engineers in the service of the Canadian Pacific recalls the old construction days of the west, when they fired and piloted the old wood-burners used in construction work. They are Tom



Canadian Pacific #529, Mason, 1883.

Penhale, a veteran engineer of 1881; James Fisher, who entered the services of the Canadian Pacific in 1882; and Henry Hardy, who first worked for this road in 1887.

Tom Penhale, who is 66 years of age and the "oldest in the service" enlisted in the construction days of the railroad, he fired at first on one of the wood-burners running between Winnipeg and Gleichen. In 1887 he was promoted "to the right hand side" and for two years operated a switch engine in Winnipeg. He was transfered to Medicine Hat in 1890 and engineered on one of the construction trains in the Crows Nest division until 1905 when he was transfered to passenger service.

Jim Fisher had a most enviable record as a railroader. He started as a fireman on the old Intercolonial, at Truro, Nova Scotia in 1871, and in the course of the fifty-one years he had been "on the road" he had covered over two million miles in the cab of an engine. He joined the Canadian Pacific in 1882, worked as an engineer in construction and he had the distinction of taking the first construction train over the initial pile bridge across the South Saskatchewan River at Medicine Hat. Three years later he pulled the first transcontinental train over the same bridge with engine No. 124, and some time after, with the same engine, he made the fastest run ever recorded on his division, "doing" from Gleichen to Medicine Hat, a distance of 125 miles, in two hours and twenty-five minutes, with four stops and a delay occasioned by a hot box. He was at the "front" when the rails met at Craigellache in 1885, and it was also his privilege to take the first train equipped with air brakes from Winnipeg to Medicine Hat. He was promoted to passenger service in 1886, and it was his proud boast that during the 36 years in which he piloted passenger trains he never had a passenger or a trainman killed while he occupied the cab.

Henry Hardy joined the road 36 years ago. In three years he was appointed fireman on construction work on the Prince Albert branch. He took his first engine from Moose Jaw to Canmore in 1897 and from the following year worked as engineer from Medicine Hat, being promoted to regular service in 1906.

These men helped to nurse the railroad in its infancy and have watched it grow from a speculation involving the fate of a nation to one of the nations' greatest assets.

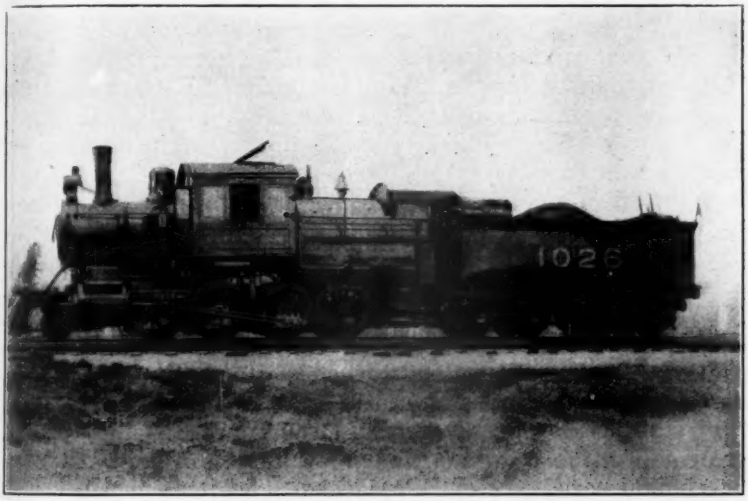
An early locomotive of the Canadian west was the Canadian Pacific's "Countess of Duffern". It was taken over from the Northern Pacific, and came down the Red River from the United States. Baldwins' were the builders, this locomotive being typical of the engines of the early seventies, then the glory of the railroads. It can now be seen in front of the Canadian Pacific Railway station in Winnipeg.

From June 1886, thenceforward the work of expansion never ceased, and it was not long before a vast wilderness was enmeshed and tamed for ever in a net-work of steel.

Once the company decided upon St. John as its Maritime terminus, the next step was to construct, lease, or buy trackage

into that city. The officials of the company turned their attention to acquiring the New Brunswick Railway.

This New Brunswick Railway, which it will be recalled, had absorbed the St. Andrews and Quebec Railway, ran from a point near Fredericton to Edmunston. Like most of the pioneer lines of Canada it was narrow gauge. In 1882, the Canadian Pacific Railway, obtained a controlling interest in the line, and the Hon. Isaac Burpee was appointed president. Gradually the New Brunswick Railway absorbed all the lines on the western side of the St. John River, except the Grand Southern (afterwards the New Brunswick Southern) owned by Russell Sage, of New York, famous American pioneer railroader, and the St. John



Canadian Pacific #1026.

Bridge and Extention Company, which were acquired in later years. Thus, commencing in 1882, a unifying progress went on for several years and steadily amalgamated the confusing web of numerous little roads in New Brunswick into one great whole tributary to the Canadian Pacific.

The great event in relation of the company with St. John came on June 3, 1889, with the opening of the "short line" from Montreal to St. John, which marked as it were, the official entry of the railway into the city. For many months St. John had

been awaiting this train with the keenest anticipation. At 8.30 p. m. on June 2, Engineer James Wells at the throttle, Conductor John Cunningham in charge of the train drawn by locomotive No. 174 and consisting of four cars, pulled out from Montreal. There was nothing ostentatious about its make-up or its progress, but after an uneventful journey, it steamed into St. John, Union Depot, at 3.15 p. m. on the 3rd, with Mr. Thomas McKenna, (who still resides in West St. John) as engineer, a crowd of nearly 2,000 jubilant citizens was awaiting it. The train was received with hearty cheers and thoroughly inspected from end to end. Newspapers printed detailed descriptions of the train and hailed its advent in glowing terms.

The citizens did more than merely meet the train. They decided to have a celebration to mark the occasion. Accordingly, the announcement was made of a "Summer Carnival and Electric Exhibition to be held in St. John, N. B., Canada, opening July 22, 1889, to celebrate the opening of the Canadian Pacific Railway (Short Line) to St. John." Old programs and posters still existing give lavish descriptions of the splendors which were offered. The opening ceremony included an address by the chairman, Henry J. Thorne, Esq., which was preceded by the firing of a salute of one gun by electricity in honor of the Lieutenant Governor, Sir S. L. Tilley, K. C. M. G., C. B., and an address by the Lieutenant Governor, who opened the exhibition by firing three guns by electricity. Then came the National Anthem, played, with variations, by an electric piano, and the show, so to speak was "on". It lasted several days, with "athletic sports", monster trade processions, regatta, mammoth marine pageant and pyrotechnic display on harbor, torch-light parade on the hills, theatrical entertainments by well known companies, and many other attractions.

At any rate the affair was a great success, the Canadian Pacific issued special rates for the occasion and everyone was satisfied. Thus came the Canadian Pacific to St. John.

We cannot deal with the railway, without making some mention of the Company's steamships and their connection with St. John.

In 1895, the Old Beaver Line of Steamships, inaugurated its first service to St. John. The Canadian Pacific had a special interest in this event because, through the fact that the Old Beaver Line was subsequently absorbed by the Elder Dempster,

those vessels on their Canada to England route later formed the nucleus of the Canadian Pacific's Atlantic fleets.

The creation of the Company's Atlantic fleets, (their ships had been sailing the Pacific) was accomplished by a stroke of the pen. The fifteen fine steamers maintained by the Elder Dempster Line on the Canada to England route were purchased outright at a cost of nearly £1,500,000. These ships ranged from 4,000 to nearly 10,000 tons. Freight and passenger services were established between Liverpool, Bristol, London, Antwerp and Canada, this was in 1903. In the years following, this fleet was constantly increased and improved until it reached the imposing proportions of today.

In 1913, the Canadian Pacific established its Bay of Fundy service. This service was taken over from the Dominion Atlantic Railway Company, and plies between St. John, New Brunswick, and Digby, Nova Scotia, some 45 miles away. It was first maintained by the S. S. "Yarmouth", later reinforced by the S. S. "St. George" until the later was chartered, in December 1914, by the Imperial Government, for war purposes, the "Yarmouth" carrying on until May 1916, since then the S. S. "Empress" has maintained the service.

The Canadian Pacific, as a transportation system, has increased its trackage, between 1896 and 1926, from 4,315 miles to nearly 20,000 miles, its locomotives from 336 to 2,500, its freight cars from 7,835 to 90,542, its passenger cars number 3,000 and it has built up a fleet of 86 steamers. It controls in addition many smaller roads, the most important being, the Minneapolis, St. Paul and Sault Ste. Marie, and the Duluth, South Shore and Atlantic Railroads, in the west, and the Montreal and Atlantic, the New Brunswick Coal and Railway Company, and the Dominion Atlantic Railway in the east.

This latter road follows the unique practice of naming its locomotives, the engines as a rule, taking their names from places along the line. Until recently the engines were painted a dark red, but now most of the locomotives are Canadian Pacific and are painted black. Light locomotives are used as a rule; American and ten-wheelers being the favorite types. One of the best known trains in Eastern Canada is the "Bluenose", an express train which operates on this road. It runs over the Company's rails, from Yarmouth to Windsor Junction, thence Canadian National to Halifax.

The Previous History of El Paso and South-Western No. 1 and Something of Her Contemporaries on the Saint Paul.

By Lt. Col. Laurence A. Curtis.

In 1912 when Orozco was stirring things up along the Mexican Border our regiment was rushed to El Paso for border patrol. I was approaching the railroad one night in El Paso when I saw before me a little locomotive of very familiar outline. Surely those high set slanting cylinders, those big drivers, and the contour of the dome and sand box spelled Breeze Kneeland, 1857. The little engine was not on the road but sat within a railing on a grass plot, she was painted maroon, striped and lettered in gold, bore the number one, and a brass plate proclaimed her to be the first locomotive of the El Paso and South-Western and the first locomotive to enter Bisbee, Arizona. Sure enough, there was the Breeze Kneeland badge plate on the steam-chest dated 1857. She had the plain wooden cab without a panel below the windows used by the Chicago Milwaukee and St. Paul in the seventies and the old St. Paul tender with a heavy wooden frame and a tool box behind, the St. Paul headlight brackets of short box days kept in use over the extension front. Yes, there in the dark on the Rio Grande was one of the old Chicago Milwaukee and St. Paul Breeze Kneelands that used to pull the Rockford passenger out of Madison, Wisconsin.

In the old Fifth Ward school at Madison I shared a back seat in front of the window with the son of a St. Paul engineer. On alternate days during the last morning period we would see number 109 just returned from Rockford, Illinois, come up to the head of the yard and continue on to the cross road to drop the engineer near his home and then be taken back to the roundhouse by the fireman. My seat mate was the engineer's son. 109 was a wonderful engine, his father had had her off and on for twenty years, she was quite the fastest thing on the road. 109 went to the shop in 87 or 88 and was relieved by 105 another Breeze Kneeland and a sister engine. They were exactly alike except that 105 had the ornamental scroll work between the drivers common in the early days. The El Paso engine has this.

105 disappeared while her paint was still shiny and was succeeded by a larger engine. She probably went to a purveyor of used locomotives and found her way to the new El Paso and South-Western. Any way No. 1 is one of the old Chicago Milwaukee and St. Paul Breeze Kneeland passenger engines.

There were several Breeze Kneeland engines in service on the St. Paul in the eighties, the freighters had smaller drivers, otherwise they were all alike and all built in 1857 the last year of Breeze Kneeland's existence according to Angus Sinclair. Number 95 came down to the Madison round-house from somewhere up the line, probably the Sauk City branch, in 1886 to get her boiler washed. She was a freight engine and had a wood burner with a balloon stack, probably the St. Paul's last wood burner. 102 was the switcher for the Madison yard in 1888. 105 and 109 were high wheeled passenger engines, there had been fourteen or fifteen of them altogether.

In the library of the Wisconsin State Historical Society there used to be and probably still are, some musty and interesting little volumes, annual reports to the State Railroad Commission of the activities of the various Wisconsin railroads from their very beginnings. The beginning of the Chicago Milwaukee and St. Paul and Wisconsin's first railroad was the Milwaukee and Mississippi in 1848 built from Milwaukee through Whitewater, Stoughton and Madison to Prairie du Chien. The first engine was a Norris and is described in the Norris article in Bulletin No. 10. I have seen pictures of this engine in Wisconsin publications. It was named the Madison. Possibly the Norrises had named it the Iowa, builders often named their engines, and the road changed it. The Milwaukee and Mississippi was reorganized in a short time as the Milwaukee and Prairie du Chien and names were dropped. The Milwaukee and St. Paul was built across the state and on to St. Paul in the Fifties. It was consolidated with a road from Milwaukee to Chicago and the Milwaukee and Prairie du Chien soon after the Civil War as the Chicago Milwaukee and St. Paul. The Milwaukee and St. Paul had seventy engines and kept their numbers, the Prairie du Chien engines started where they left off and old Norris No. 1 became 71 and so remained until she left the rails to make steam for a pump at Waukesha. The railroad reports show the acquisition of the Breeze Kneelands by the Milwaukee and Prairie

du Chien in 1857. They were numbered in the thirties and forties.

In the Eighties there was much of the old power of both the Milwaukee and St. Paul and the Prairie du Chien in the Madison round-house. The line along the Wisconsin river to Prairie du Chien is level and the traffic was not heavy, light engines could handle it. The Milwaukee, St. Paul line became the main line and the new power went there. Engines from absorbed lines were also represented. No. 86 was a Hinkley and Drury with outside frames. She spent the most of the time in her stall, he'ping out at times with the switching. No. 5 and No. 6 alternated on the Watertown passenger, they were little two domed engines with no badge plates, No. 1 herself another two domer switched for a time in the Madison yard. A number of old timers did regular road service, the most of them after many shoppings had the road's standard fittings and were devoid of badge plates and builders' ear marks. No. 70, Milwaukee and St. Paul's latest at the time of consolidation, pulled freight to Prairie du Chien. She was a Taunton but not a Mason, later became a passenger engine and met her end at the state fair in Milwaukee in 1902 in one of the prearranged head on collisions popular at that time. Her opponent was a Grant also a St. Paul engine. The Grant was manned by a veteran of the Chicago and North-Western, and a St. Paul veteran had the Taunton. Seventy was the larger engine her engineer gave her too much steam before he jumped off and the wheels spun around and wouldn't bite the rail giving her the appearance of a big bully making a blustering demonstration at a smaller antagonist. In the mean time the little Grant came briskly on and it began to look as though she were going to hit the big Taunton before she had gotten out of the crowd into the allotted space, but while the crowd about the engine was busy trying to get somewhere else 70's drivers caught the rail and she advanced to the joust. The Grant was proclaimed the victor and adorned with the name of the Democratic candidate for mayor of Milwaukee for the approaching election. 519 alternated with 109 on the Rockford passenger. She was a little Rhode Island from an absorbed road, very handsome with lots of brass. The St. Paul kept the brass on its older engines until the nineties. She was the last passenger engine to keep the diamond stack. The St. Paul

began straight stacking its passenger power in 84 or 85. The most of the passenger engines had been to the shop a second time and the freight engines had been started on and 519 still wore her diamond stack and her engineer eased her carefully out of the yard over the switches on the way to Rockford. At the out break of the Spanish War the Wisconsin troops were mobilized at Milwaukee. As a soldier I visited the St. Paul shops and walked along the melancholy avenue where the remains of bygone engines were neatly arranged. There was the Great Western Britisher exhibited at the World's Fair and taken over by the St. Paul and tried unsuccessfully on the Chicago-Milwaukee express, standing complete but rusty, and beside her the little boiler of 519 with the polished steel number plate still on the front end. 516 and 517 were twin Rogerses of 1872. There were double domed Baldwins of the early seventies. 161 pulled the Milwaukee passenger, she was very splendid, not only the two domes, steam chests and cylinders but even the sand box were completely encased in shining brass. 161's running mate was No. 200 a Mason Taunton similar to the Charles Richmond pictured in Bulletin No. 8. I recognized 200 in the Janesville yard in 1907 backing down to a local, black and dingy with a big four place classification number on her tender. There were handsome Brookses and some Grants, 372 a smart little engine handicapped in winter by a snow plow that took the weight off her drivers, later Baldwins with single dome and wagon top. In the east end of the house were the big Rhode Island eight wheelers of '81 and '82 that pulled the freight to Milwaukee. Big McQueen passenger engines with oil finish brown cabs came down from the main line at Portage with extra lumber trains, sometimes a ten wheeler but there was nothing regularly in the Madison house with more than four drivers. One winter evening when a blizzard raged, 351 a Danforth Cooke steaming up to double head the Prairie du Chien passenger blew up. The entire roof of that section of the round-house went off and the tall sand box with its acorn top was found in the snow way back behind. The gauge had registered low a short time before, no one knew why 351 went up. All the engines that stood in the neighboring stalls are gone now, and the round-house itself, gone their way, served their time and given place to something else.

Notes on English Locomotives.

By R. E. Pennoyer.

The reference in Bulletin No. 11, Page 27, to the locomotive "America", built by the Grant Works in 1867, and shown in Paris that year, recalls the report made by W. S. Auchincloss, one of the Commissioners sent to the Paris Exposition by the United States Government. In that portion dealing with the "America", Auchincloss writes:—

"Our own country was most creditably represented in the engine "America", furnished by the Grant Locomotive Works, of Paterson, New Jersey. The class of engine and workmanship produced by this Company and its predecessor, (the New Jersey Locomotive and Machine Company), are too favorably known to admit of extended remark. As presented in this engine they were a source of conscious pride to those who had crossed the Atlantic, as well as surprise to continental minds, the majority of whom are imbued with exceedingly plain ideas on the subject of locomotive ornamentation. Some go so far as to consider any attempt at the latter a grave misdemeanor, and paint their entire engines a solemn lead colour or funereal black, without a single pencilling of gay colors to relieve the dull monotony. Of course, the contrast was very marked between such and the "America", with her bright German silver jacketing on boiler, cylinders, chimney, and head-light, her cab beautifully inlaid with ash, maple, black-walnut, mahogany, and cherry; with the tender, shaded, striped, and ornamented in a manner common to American practice. The cast-iron tender truck wheels and hollow-spoked driving wheel centers gave rise to many speculations among those who have not yet learned their value. Much skill is evinced in the arrangement of the parts, and the reduction of their weight to a minimum consistent with strength. The link motion is well schemed and counter weighted by volute springs, instead of the clumsy weights so general on foreign engines. A fitting acknowledgment of the high order of workmanship displayed was made in the award of a gold medal to the builders."

Auchincloss's description of the finish of the "America" reminds one of the change that has taken place, during the past

half-century and more since he wrote, in what he calls "locomotive ornamentation". The United States now stands where he then found the Continent, and the Continent stands midway between the United States and England, and he would have to consult modern British practice to find a parallel to what he claimed was customary in the finish of locomotives in America in 1867.

Yet the recent decision of the Southern Railway in the painting and lining out of its new Pacifics, and the comment on this step appearing in the "Railway Age" and "New York World", seems to show that this question may again become a live one in the United States, and that the pride in good paint work and

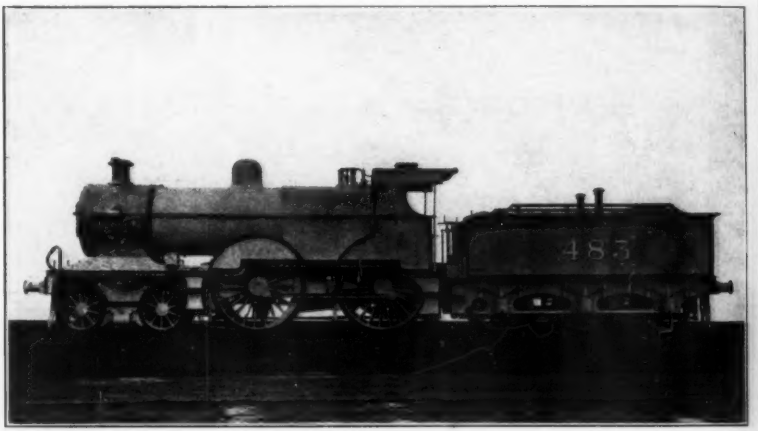
Midland Ry. #3886.

fine finish that so delighted Auchincloss and the older school of railwaymen, may add a further interest and stimulus to the extraordinary development of the American locomotive. Many will take issue on this point, claiming "handsome is as handsome does", and that in these days no money or time can be given to such refinements. But an examination of English practice will show its tradition of fine finish to be but a part of a carefully thought out policy developed over a long period of years, and that can be justified through its influence on design, construction, and maintenance, not only through the excellent road performance of the English locomotive and the very gener-

al interest shown by the travelling public in well finished engines, but also that it could so impress Robert E. Thayer, European Editor of "The Railway Mechanical Engineer", as to lead him to write the following note in that paper:—

English Locomotives

One of the first impressions that an American receives when he reaches Great Britain is the small size of the English locomotives, and as he looks back over the train of anywhere from 10 to 15 cars he wonders how a machine of such size can haul so long a train. The English locomotives are very small when

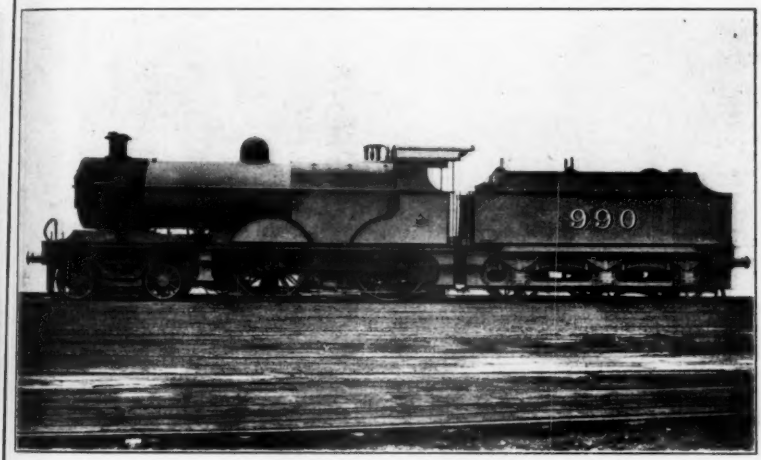


Midland Ry. #483.

compared to the more modern locomotives used in this country, but they do their work with an apparently lack of effort that is particularly noteworthy. The English locomotive is a beautiful thing to look upon; they are well porportioned and particularly well kept. The master painter of the British roads is still a most important person and he produces a beautiful product. The locomotives themselves operate as well as they look.

The locomotives are specially well maintained compared to the locomotives in the United States and the expression that "they are built like a watch" is hardly an exaggeration. The

English railways are obliged to work to much closer limitations in their construction of locomotives than we do in the United States. The weight of the locomotives is so carefully distributed on the wheels that no equalization is found necessary. Inequality in wheel loads is regulated by the tension of the driving springs. The driving boxes are fitted to the frames without the use of shoes and wedges on most of the English engines. The pedestal jaws are carefully faced to fit the driving boxes with an allowable clearance of only .008 in. All driving wheels are given a careful running balance and in some cases the motion work of the locomotives is laid out on a dummy frame before it is applied to the locomotive.

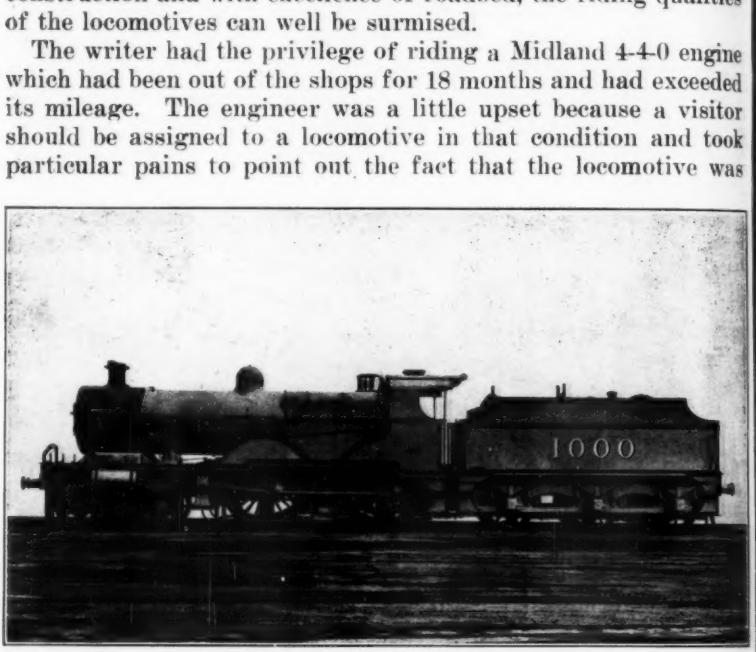


Midland Ry. #990.

No less care is used in the construction of the boiler. No boiler plates are punched, except for a few holes which are necessary for assembling the boiler. The barrel plates are rolled and held with temporary strips while they are being assembled. The circumferential seam of the boiler barrel is of the butt type. A welt plate bored out to a diameter slightly less than that of the boiler is shrunk onto the boiler. After the barrel has thus been assembled and the longitudinal welt strips put in place with temporary bolts, the entire barrel is taken to a large boiler barrel drilling machine, where all rivet holes are drilled.

With such care taken in the construction of the English locomotive it will be readily understood that they do not suffer from any great maintenance troubles. These are further alleviated by the excellent roadbed found in England. With high grade construction and with excellence of roadbed, the riding qualities of the locomotives can well be surmised.

The writer had the privilege of riding a Midland 4-4-0 engine which had been out of the shops for 18 months and had exceeded its mileage. The engineer was a little upset because a visitor should be assigned to a locomotive in that condition and took particular pains to point out the fact that the locomotive was



Midland Ry. #1000.

overdue for repairs. But its riding qualities were far superior to any of the most perfectly maintained locomotives in the States and would compare very favorably with the riding qualities of a good many of the coaches on some of our trains at the present time.

Mr. Thayer refers to the smooth running qualities of a Midland Express engine, and as of possible interest, photographs of four of the principal express classes on this railway (now a part of the London, Midland & Scottish Railway Company), are shown, among them a three cylinder compound, which is one of the most efficient machines in the Kingdom.

A run on the Midland 0-10-0, 4 cylinder simple engine used as a pusher on the famous Lickey Incline, (see Bulletin No. 10 page 46), both when working a heavy train up the incline, and running down "light", shows that smoothness of running is not confined to passenger engines, and that it can be achieved as well in locomotives for freight service.

There has been so imposing an advance recently by American designers in the development of size, power, and efficiency, that they can claim immense credit in the evolution of the steam locomotive. But is it too much to hope that the time will soon come when, harking back to an older American tradition, they will make an equally great advance in the refinements of design, construction, and finish, with the undoubted benefit that these would have on maintenance, on performance, and, through the individual note that proper paintwork and finish might give the motive power of each system an understanding of locomotive work.

Some Historical Items.

By G. W. Bishop.

About the year 1896 there was a stone in the graveyard at Merthyr Tydvil, Wales, inscribed: "Sacred to the memory of Adrian Stevens of this town—Inventor of the Steam Whistle for Locomotives". Many years afterwards the stone was removed by subscription to the cemetery at Cefn.

American locomotives in the British Isles.—Mr. Norman Thompson points out that there were two Baldwin engines on the Cork, Bandon and South Coast Railway in Ireland. These were illustrated and described in the "Locomotive Magazine" for March, 1901, and were 0-6-2 saddle tanks, built 1901, wheels 56 inches and 24 inches, cylinders 18 X 24.

A memorial tablet to George Stephenson is said to be found at Poggibonsi Station, on the Siena line in Italy, but I have no further particulars.

Trevithick's locomotive known as the "Catch me who can", which ran upon a circular track in London, 1808, was built, it appears, by the firm of Foster and Rastrick, and a representation of it is included in the Trevithick memorial window, Westminster Abbey. Foster and Rastrick are well known as the builders of the "Stourbridge Lion" and "Agenoria".

The Birmingham & Gloucester Railway.—The first section opened was from Barnt Green to Cheltenham, July 1, 1840, road coaches conveying passengers between Barnt Green and Birmingham. The line was extended to Camp Hill, Feb. 10, 1842. One of the Norris engines, it is said, was rebuilt as a tank engine, and worked on the Tewkesbury branch. The Bromsgrove tombstone originally had black lettering on a white ground. This was altered to white on black when the stones were restored by Sir Henry Fowler, in 1913.

The death occurred on Jan. 1, 1927, of Mr. Thomas Bowker, of Tipton, Staffordshire, England. Some reminiscences of Mr. Bowker's engine-driving career appeared in Bulletin No. 6. He was the inventor of an improved rail-joint, but had not succeeded in getting it accepted by a railway company.

The Horseley Bridge & Engineering Co., Ltd., of Tipton (see above) call attention to some early locomotives built by Mr. Isaac Dodds, who was in charge of the above works about 1830. It was thought that these engines were for the Grand Junction Railway, but a correspondent in "The Locomotive" states that they were for the St. Helen's Railway, in Lancashire. No detailed records have yet been found to exist, but the firm would be glad to hear of any reference to them that may be discovered.

The Genesis of the Locomotive Truck.

By J. Snowden Bell.

The steps of development which have intervened between Cugnot's steam carriage of 1769 and the highly perfected locomotives of the present day, are many in number and various in character. An enumeration and even a brief description of all of them, would be far beyond the permissible limits of this paper, but the following features may properly be here noted, as leading and characteristic ones, and of universal approval and adaption, viz: the multitubular boiler; the swivelling truck or "bogie"; the disposition of weight upon a plurality of pairs of driving wheels; the superheater; and the water tube fire-box and combustion chamber. Among these, there can be no question as to the substantial importance and value of the truck, the application to which of the proverbial truism *suum cuique*, "to every one his due", is, as in many other questions of history, a difficult one, by reason of the loss or destruction of records, and the passing from us, of those who had personal knowledge of the facts.

The design and introduction of the locomotive swivelling truck have been generally, if not universally, ascribed to John B. Jervis, the correctness of whose published statements of his work, in that regard, has not been disputed, and whose status, as an independent designer, does not appear to be impaired by any existing record. In view, however, of other and equally authentic data, which will be hereafter referred to, it would seem that a leading truck was independently devised, and applied to a locomotive by Ross Winans, of Baltimore, Md., about the same time as that of Jervis.

The design and introduction of the Jervis truck is briefly, but sufficiently, described in the following excerpt from Mr. Jervis' treatise, "*Railway Property*", Philadelphia, 1866, pages 159 and 160.

> "After devoting a good deal of labor to this subject, I prepared a plan, which it is hardly necessary to describe at this time, as it is in general use on the locomotives of this country. This plan, in its general features, had a guiding truck, or a four-wheeled car, arranged as best

adapted for following curves on the rail, and keeping on the track, and, at the same time, supporting steadily the forward end of the engine frame. The plan of the engine was prepared in the fall of 1831, and sent to the West Point Foundry Association, who built the engine, and it was placed on the track of the Mohawk & Hudson Railway in the summer of 1832. The working of this engine (named the "Brother Jonathan") satisfied me that the truck principle would be successful, though the engine was not so in other respects, the attempt having been made to adapt the boiler to the use of anthracite coal, and this required to be changed, which was done the following winter. I then prepared a new plan for an engine for the Saratoga & Schenectady Railway, following substantially the same plan, except as to the boiler, and sent it to George Stephenson, Esq., of Liverpool, who constructed the engine, and it was placed on the Saratoga & Schenectady Railway early in the following summer (1833).

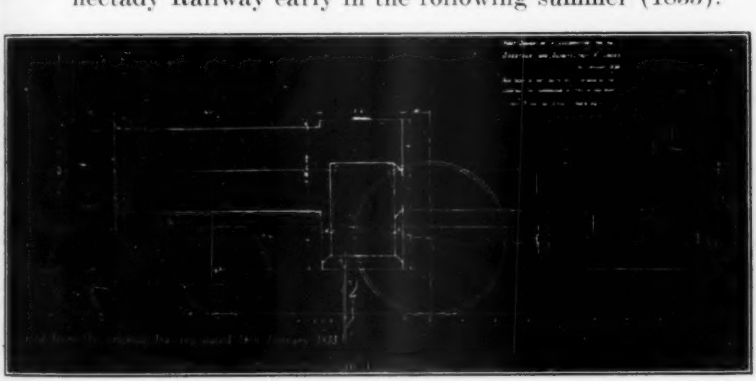


Fig. 1.

The design of the Saratoga & Schenectady locomotive above mentioned, is shown in Fig. 1, which is reproduced from an illustration entitled "First Design of a Locomotive for Saratoga and Schenectady Railroad", appearing on page 306 of "*A Century of Locomotive Building by Robert Stephenson & Co. 1823-1923, by J. G. H. Warren*", Newcastle upon Tyne, 1923.

A small volume entitled "*A Complete View of Baltimore*", by Charles Varle, 1833, contains statements of "Time of De-

parture of the Railroad Cars" and other particulars of the then Baltimore & Susquehanna (now Northern Central) Railroad from which the following excerpts are made.

"The cars on this road are drawn by a beautiful and very efficient imported locomotive steam engine, which affords a very pleasant and delightful mode of travelling", p. 75.

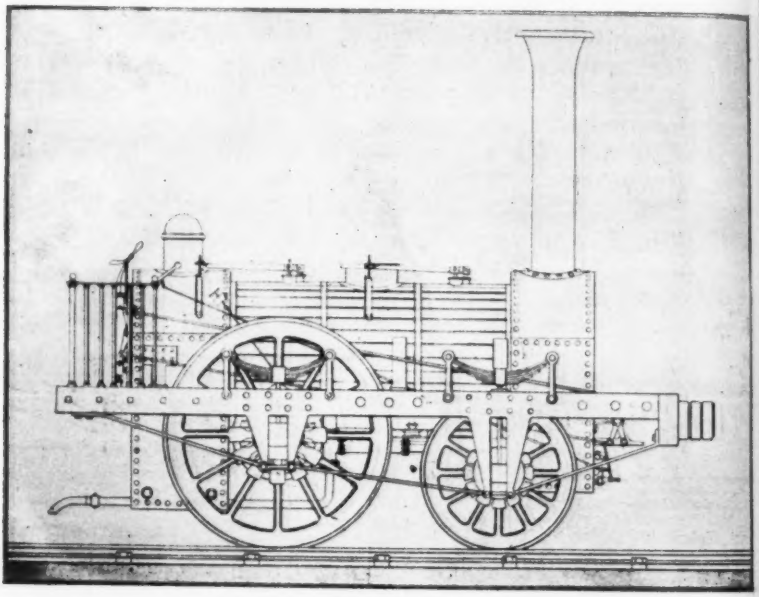


Fig. II.

"In addition to what has been said of this road, on page 75, we will add, that the locomotive engine called the Herald, received last summer from Liverpool, which is a beautiful piece of mechanism, costing the Company $4,000., being calculated to run on a straight track, would not suit this meandering road, but American genius overcame this difficulty, and the company, as well as the world, are indebted for this improvement to *Mr. Jonathan Knight*, of this city". p. 107.

The author of the book was evidently not clear as to the design of the improvement, as the list of errata following the title page, contains the item: "Page 107, in Note, for *Jonathan Knight*, read *J. Smith Hollins*".

No description has been found, either of the "Herald", as originally constructed, or of the appliances which "American geinus" produced, and which enabled it to traverse the "meandering" line of the Baltimore & Susquehanna Railroad. It was, however, doubtless of the so-called "Planet" type, which was then the standard of the Stephenson works, and it is certain that the improvement that was applied to it, was a four wheeled leading truck, as the locomotive was equipped with one, up to the date of the retirement from service, which is stated, in the company's reports, to have been in 1859.

Fig. 2 which is reduced from an illustration in Pambour's "Practice Treatise on Locomotive Engines" (American Edition), Philadelphia, 1836, shows a "Planet" type locomotive, with which it may be reasonably assumed the "Herald", as it came from the builders, substantially corresponded, and the view that Ross Winans is to be credited with applying a truck to it, is based in the first place upon the fact that he was, at the time of the application, actively engaged in connection with the development of the motive power of the Baltimore & Ohio Railroad, then the only railroad, other than the Baltimore & Susquehanna, leading out of the city of Baltimore, and which had, prior to the construction of the "Herald", proven the practicability of steam locomotives. It is further supported by the following authentic matters of record.

Incidentally, it may be here noted that, some time after the "Herald" had been equipped with a truck, its forged crank axle broke, and James Milholland, then Master of Machinery of the Baltimore & Susquehanna R. R., astonished the motive power officers of the period, by substituting a *cast iron* one, which continued in service during the remainder of the life of the locomotive.

The 1886 Catalogue of the Rogers Locomotive and Machine Works, entitled "*Locomotives and Locomotive Building*", was prepared by the late M. N. Forney, and conforms, in its clearness and accuracy of description and illustration, with other and well known technical works of that author. In Chapter III of the Catalogue, which presents "The Early history of locomo-

tives in this country", there appears, as Fig. 6, page 7, a side view of a locomotive called "The South Carolina", which was designed by Horatio Allen, and built for the South Carolina Railroad by the West Point Foundry Association, in the year 1831, as to which it is stated that:

> "The engine had eight wheels, arranged in two trucks, one pair of driving wheels and one pair of leading wheels forming a truck * * * The trucks were connected to the engine by king-bolts in the usual way."

On page 9, the statement is made that "a marked "feature of difference between American and English locomotives "has been the use of the truck, under the former. Its use was "proposed by Mr. Horatio Allen, in a report, dated May 16, 1831, "which he made to the South Carolina Canal & Railroad Company, of which he was then the chief engineer." Following this, the 1831 Mohawk & Hudson truck of John B. Jervis, *supra*, is mentioned, and on page 10, it is stated that

> "A truck was also devised by Ross Winans and applied to a locomotive on the Baltimore & Susquehanna Railroad (now the Northern Central) in the latter part of 1832".

In the suit of *Winans vs. Schenectady & Troy R. R. Co.* brought for infringement of the Winans Patent for eight wheel car, Judge Conkling, in his charge to the jury, in 1854, referred to an invention of John B. Jervis and said that

> "this was the year after Mr. Winans made a like application of four wheeled trucks to the Columbus [an eight wheel passenger car] and about the time of a similar improvement made by him on the locomotive Herald, as testified to by Mr. Alexander."

No record of this testimony has been preserved, but Judge Conkling's statement makes it clear that it was Ross Winans who equipped the "Herald" with a truck, and while the exact date at which this was done, does not appear of record, it evidently approximated that of the Jervis truck. There is no reason to doubt that the conception of the design was an original and independent one, both as to John B. Jervis and Ross Win-

ans, and the question of their priority in date is not of material importance or interest.

The determination of whether or not the design and application to a locomotive of a swivelling leading truck, by either of these engineers, involved what is known in the law as "patentable invention", or the mental operation which is a pre-requisite to the grant of a Patent, would, however, in view of the showing of the prior art, seem necessarily to be resolvable in the negative.

The British Patent of W. & E. W. Chapman, No. 3632, December 30, 1812, for "Working Carriages on Rail and other Roads", from Fig. VIII of the drawings of which the accompanying Fig. 3 is reproduced, sets forth and shows a carriage for a locomotive engine, which is described in the following terms.

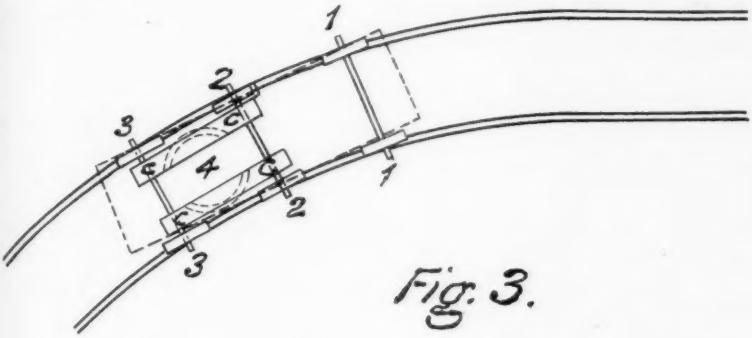


Fig. 3.

"Fig. VIII shows a carriage of six wheels for the engine, which may rest equally or nearly so, on each of its wheels and move freely around the curves or past the angles of a railway, 1, 1, the fore pair of wheels are, as used on railways, fixed to the body of the carriage 2, 2 and 3, 3 the other two pair are fixed (on angles parallel to each other) to a separate frame over which the body of the carriage should be so poised as that two-thirds of its weight should be over the central point of the four wheels where the pivot 4 is placed and the remaining third over the axis 1, 1."

It is not probable that either Mr. Jervis or Mr. Winans was aware of the existence of this old British Patent, but if it had been before either of them, it would obviously have been the fact, that he would have made no *invention*, but would have merely exercised his ordinary and expected knowledge and ability as a mechanical engineer, in making an application of the Chapman design in an American locomotive.

A summary of the facts above stated, leads to the conclusions: *(a)* that the design of swivelling truck for locomotives was first described and illustrated in the Chapman British Patent No. 3632, of December 30, 1812; *(b)* that a swivelling leading truck was first applied to a locomotive, of the Mohawk & Hudson R. R., by John B. Jervis, in the summer of 1832; and *(c)* that a similar application was made by Ross Winans, on the locomotive "Herald" of the Baltimore & Susquehanna R. R., at a date which is not definitely fixed, but which approximates that of the Mohawk & Hudson truck.

The Railway & Locomotive Historical Society.

The Fitchburg Railroad was another one of the early railroads built in Massachusetts and the following notices are in connection with the opening of this road.

From the Boston Atlas.

FITCHBURG RAILROAD.

Open to Waltham.

A train will commence running from the Depot at Warren Bridge to Waltham—Wednesday December 20, 1843.

Leaving Charlestown at 9½ A. M. 1 and 4½ P. M. and Waltham at 8 and 10¾ A. M. and 3 P. M.

From the Boston Advertiser.

FITCHBURG RAILROAD.

Open to Concord.

On and after Monday, June 17, 1844.—Passenger Trains will run over the Fitchburg Railroad as follows, stopping at West Cambridge, Waltham, Weston, and Lincoln.

Leave Charlestown at 7 and 10½ A. M. and 2¼ and 6 P. M

Leave Concord at 7 and 11¾ A. M. and 3¾ and 6 P. M.

Coaches will be at the Depot in Charlestown on the arrival of the cars to convey passengers to any part of the city.

S. M. FELTON, Engineer.

From the Boston Advertiser.

FITCHBURG RAILROAD.

Open Through To Fitchburg.

On and after Wednesday March 5, 1845 until further notice Passenger trains will run over the Fitchburg Railroad as follows:

Leave Charlestown at 7 A. M. 1½ and 5 P. M.
Leave Fitchburg at 6½ A. M. 10 A. M. and 4½ P. M.

Passengers by applying at No. 11 Elm Street or City Tavern Brattle Street will be called for at any reasonable distance in the city and conveyed to the Depot for 12½ cents, or between the above office and the Depot for 6½ cents.

The Freight Train will run daily over the road both ways.

S. M. FELTON, Engineer.

Fitchburg Railroad Depot, Causeway St. Boston was opened on August 9th, 1848. In October 1850 the Jenny Lind Concerts were given in the great hall over the passenger station. the largest hall in New England at that time.

From the Boston Advertiser. Oct, 12, 1850.

"The Concert last evening in the Hall over the Fitchburg Rail-Road Station was attended by an immense and enthusiastic audience. Miss Lind's voice did not seem to quail at all before the large area it was obliged to fill, but sounded as distinctly and sweetly as ever. In the programme it was stated there would be three more concerts in the Fitchburg Station Hall next week but just before the close of the concert Mr. Barnum appeared and said this was a mistake, and that the concert this Saturday evening would be positively the last in Boston."

The Directors of this Society held their Annual Meeting at the residence of Mr. J. W. Merrill, Newton Center, Massachusetts, on the afternoon of February first.

At the request of Warren Jacobs, he was relieved from the duties of Corresponding Secretary and Mr. F. W. Martin was elected to succeed him.

The Committee in Charge of Publications was enlarged and Mr. C. L. Winey was elected a member of this committee.

Our Vice President reports he has distributed 396 Bulletins during the last year and has copies of all save the first two bulletins on hand.

Our Recording Secretary reports at the end of the year 159 members, divided as follows: 22 Life, 65 Honorary and 52 Ordinary. This is an increase of 28 members during the year. Two of our members have died and resignations of two have been received.

Our Treasurer reports a small deficit at the end of the year on account of the heavy expenses incurred in printing our last bulletin.

Reports were received from three representatives and the prospects in the vicinity of each look extremely bright.

A method of exchange of prints and an album for the circulation among our members is under the immediate supervision of Mr. G. W. Bishop and Mr. J. W. Merrill. Our members are urged to get in touch with these gentlemen who are interested in this work. This includes not only our foreign members but those of us who live in America and are interested in foreign subjects as well.

C. W. PHILLIPS,

Recording Secretary.

During the past year there has been an increased interest shown in this Society, as the reports of our officers and representatives indicate. The list of members in this leaflet contains 149 names which represents our membership at the end of the second month of 1925. You who are not a member of this Society are urged to join for the benefit of both of us.

From many of our members have been received words of praise in the matter of the last two bulletins. It is the aim of the committee to make these bulletins of value as works of reference. We have started the feature of writing the history of the various locomotive builders in the country—a difficult task for one or two members to do. Lists of motive power of early railrads has been a feature and the following subjects will appear regularly in future issues:

Ilustrations and description of early locomotives now on permanent exhibition throughout the country.

Two or three illustrations and description of early locomotives in this country and England.

Reprints from early pamphlets relating to early locomotives.

Railroad and locomotive technology.

These features will increase the value of our bulletin for future reference, and I wish every member would help the committe as much as he individually can.

Your attention is called again to the change in membership. The dues now payable annually entitle each member to receive the two bulletins issued each year and I am sure this will meet with the favor of our members. Those of you who can use more than one bulletin are urged to do so and those of you who have not a complete file of bulletins, Nos. 1 and 2 excepted, are urged to get them before the present supply is exhausted. At some future date, the first two bulletins may be reprinted.

I hope the support that the members have given your directors in the past will be continued. These officers are your officers and they are here to help you.

CHAS. E. FISHER
President.

March 1st, 1925.

Charter and By-Laws of the Railway and Locomotive Historical Society.

Article 1. Name. This association is organized under the name of the Railway and Locomotive Historical Society.

Article 2. Object. The object of this Society shall be the increase, diffusion and perpetutation of knowledge of locomotive and early railroad history and data and to assist and mutually benefit collectors of locomotive photographs and early railroad data. The income of the Society is to be devoted to the propagation of the interest of the Society only and shall not revert to the benefit of any individual.

Article 3. Membership. Section 1. The Society shall consist of members and life members.

Section 2. Members shall be persons interested in the objects of the Society. They shall receive copies of the publications free of cost.

Section 3. The election of members and life members shall be intrusted to the Board of Directors.

Government.

Article 4. Section 1. The administration of the affairs of the Society shall be intrusted to a Board of Directors composed of eleven (11) members in good standing who shall be elected at the annual meeting on or about the first Saturday of January each year, to serve for one year or until their successors are elected. Directors who do not hold office will serve for three years, two directors to be elected annually. A majority of votes cast will be necessary for election. In the event of a vacancy occurring among the officers of the Society, the Board shall fill the position by electing one of the members for the balance of the term, by a majority vote of the Board. Special meetings may be called at any time upon a combined request of three (3) members. Any director, who for any reason is unable to attend a meeting may appoint one of the members of the Board his attorney with full powers to act in his behalf, but no one director shall act for more than two directors who are unable to be present.

Section 2. The officers of the Society shall be a President, a Vice President, a Recording Secretary, a Corresponding Secretary, a Treasurer and a Vice President of New England, who shall be elected from the Board of Directors, to serve for one year or until their successors are appointed.

Section 3. The President shall preside at the meetings of the Society, and of the Board of Directors, or in the absence of the Vice President, may delegate this duty to some other member of the Board. The President may delegate all active work in connection with the Society to the Vice President.

Section 4. The Vice President shall have charge of the distribution of all publications and shall take up the work of the President in his absence. The New England Vice President will take care of the New England interests of this Society and aid the President in such work as the Society requires.

Section 5. The President and Recording Secretary shall sign all written contracts and obligations of the Society.

Section 6. The Recording Secretary shall record the proceedings of the Society and Board of Directors, and submit an annual report to the Society and to the Board, at their annual meetings.

Section 7. The Corresponding Secretary shall conduct the correspondence of the Society and aid the Vice President in the work of the Society.

Section 8. The Treasurer shall have charge of the funds of the Society under the direction of the Board of Directors and shall make collections and disbursements and render an annual report and such special reports as may be called for by the Board.

Section 9. A committee in charge of publications shall consist of one officer in addition to the Vice President and two directors.

Section 10. The Board of Directors may appoint from time to time, District Representatives to take care of the interests of the Society in certain districts assigned to them. These Representatives will have no vote at the Director's Meetings but will be considered officers of this Society in the district they represent.

Finances.

Article 5. Section 1. The fiscal year of the Society shall be on the first day of January.

Section 2. The annual dues of members shall be $3.00.

Section 3. Members on approval of the Board of Directors, may commute annual dues and acquire life membership by the payment of $25.00.

Section 4. Members one year in arrears may, after formal notification, be dropped from the rolls of the Society. Objectionable members may be dropped by a two-thirds vote of the Board of Directors at any regular meeting.

Meetings.

Article 6. Section 1. The annual meetings of the Society shall be held in or near the vicinity of Boston, State of Massachusetts, on or about the first Saturday of January of each year. Five members shall constitute a quorum.

Section 2. Special meetings may be ordered by the Board of Directors or called by the President.

Section 3. Meetings of the Board of Directors shall be called at least once annually by the President.

Amendments.

Article 7. These by-laws may be amended by a two-thirds vote of a quorum at any annual meeting of the Society, provided that proposed amendments are reported to the Board of Directors, and provided that notice thereof has been sent to all members of the Society at least thirty (30) days prior to said meeting.

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